CITY AND COUNTY OF SAN FRANCISCO
DEPARTMENT OF CITY PLANNING

ENVIRONMENTAL IMPACT REPORT

123 MISSION STREET OFFICE BUILDING

DRAFT
81.183E

PUBLICATION DATE: MARCH 4, 1983
PUBLIC HEARING DATE: APRIL 7, 1983
PUBLIC COMMENT PERIOD: MARCH 3 TO APRIL 18, 1983

WRITTEN COMMENTS SHOULD BE SENT TO THE ENVIRONMENTAL REVIEW OFFICER,
450 MCALLISTER STREET, SAN FRANCISCO, CA 94102

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123 Mission Street
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I. SUMMARY

PROJECT DESCRIPTION

The proposed project is sponsored by Main and Mission Associates, a California partnership composed of The Shorenstein Company and Mission Associates Ltd., a limited partnership affiliated with Bechtel Investments. The sponsor proposes to build a 27-story office tower containing about 352,900 gross sq. ft. The building would have a Floor Area Ratio (FAR) of 14 to 1. The tower would measure 155 ft. by 137.5 ft. The building would contain two parking levels, 22 floors of office, and mechanical floors at the eighth and 27th levels. The ground floor would contain the building lobby and loading space. A covered pedestrian walkway at street level would form part of a north-south midblock pedestrian passage, in conjunction with other developments on the project block. Access to loading and parking levels would be from Main St. The project would be set back about 25 ft. from the eastern property line, separating the building from the 100 Spear St. Building under construction on the adjacent east parcel. This area would be landscaped.

The project site contains 25,208.287 sq. ft. and is 137.5 ft. by 183.333 ft. The site is located on the southeast corner of Mission and Main Sts., on Lots 14 through 18 of Assessor's Block 3717. The 18-story 150 Spear St. building was recently completed southeast of the site; construction has begun on two buildings: the 20-story 100 Spear St. building east of the site and the 19-story 160 Spear St. building, south of the site; and a building has been proposed at 135 Main St., south of the site.

PROJECT EFFECTS

ARCHITECTURAL, URBAN DESIGN, SHADOWS

The project would replace the 3 one- and two-story buildings which are on the site. The project would comply with the basic use, height and bulk provisions

of the City Planning Code and with the current moratorium on the use of floor area bonuses.

The project would be visible in the City skyline as seen from the east -- the Bay Bridge and Yerba Buena Island -- and from the north in near-range views. The project would not obstruct any scenic views now available to the public, such as of the Bay; it would block some near-range views from neighboring buildings of nearby streets.

While project shadows would, for the most part, coincide with shadows cast by neighboring buildings under construction or proposed, the project would create new shading on Mission and Main Sts.

EMPLOYMENT, HOUSING AND FISCAL FACTORS

The project would replace approximately 37,600 sq. ft. of formerly service-sector and retail space with 342,770 sq. ft. of office space (exclusive of lobby and parking space). The project would provide about 1,400 jobs on the site. Estimated housing demand attributable to the project would be about 145 to 295 housing units in San Francisco. The project would provide about 230 person-years of construction labor.

Revenues to the General Fund from the project would total about $1.03 million annually in property and other taxes, an increase of about $1.01 million over revenues generated by existing site buildings. The estimated project-generated annual subsidy requirement of Muni would be $73,600; however, project revenues to Muni based on existing revenue distribution would more than offset this deficit.

TRANSPORTATION

The project would directly generate about 250 Muni trips during the evening peak hour. The project would generate an additional 350 peak hour trips on regional transit systems. Project-related pedestrian traffic, 220 person trip ends in the p.m. peak hour, together with trips from other developments under construction in the project vicinity, would contribute to a cumulative total

that would result in volumes of 30% of capacity (this percent of occupied capacity is defined as impeded) in the east crosswalk and 57% (defined as crowded) in the north crosswalk. The south crosswalk would operate at a better level of service.

About 320 peak hour auto trips would be generated by the project. It is assumed as a worst case that 100 trips would occur on local streets from autos leaving all on-site parking spaces at one time. Levels of Service during the p.m. peak at intersections around the site would be degraded by traffic from the project and other buildings under contruction in the vicinity of the project. Mission/Main and Mission/Beale would operate at Levels of Service F; Mission/Spear would operate at a Level of Service C; and Main/Howard would operate at a Level of Service D. The project-related parking demand could be for 300 long-term spaces and 30 short-term spaces.

OTHER EFFECTS

Other project-related impacts would be generally typical of most downtown office projects. Noise effects would occur during construction, primarily from piledriving. Operation and traffic noise would result in imperceptible increases in the ambient noise level. Project construction and operation would result in increased energy consumption; the project would meet or better minimum State standards for energy conservation. Geotechnic and seismic constraints that apply to the project would be resolved through implementation of engineering and design measures recommended by the project soils engineer.

CUMULATIVE EFFECTS OF DOWNTOWN DEVELOPMENT

The proposed project, together with a net addition of 17 million sq. ft. of office space under construction, approved, or in formal review, would add approximately 17.3 million gross sq. ft. to the 57.2 million gross sq. ft. of office space that now exist in the City. This development would continue a trend of regional growth in service-sector and office activities.

Traffic due to cumulative downtown development would exacerbate peak hour conditions at the Mission/Main and Mission/Beale intersections near the

project. Cumulative parking demand would be greater than the available supply of spaces, probably resulting in an unquantifiable shift to public transit or carpooling. Increases in demand for public transportation services would result in a spreading of the peak-of-the-peak ridership conditions on most carriers, with increased incidence of overloading most likely to occur on Muni, Golden Gate Transit buses and on BART transbay trains. The project would generate 2% of peak-hour demand from cumulative development on public transit systems.

MAJOR MITIGATION MEASURES

Mitigation measures proposed as part of the project include the following:

- The project would provide the northern entrance to the midblock pedestrian walkway connecting Mission and Howard Sts., as recommended by the Department of City Planning to reduce congestion on sidewalks, and to help minimize pedestrian/vehicle conflicts along Main and Spear Sts.

- Holes for piles would be predrilled to reduce noise impacts.

ALTERNATIVES

The following alternatives to the proposed project are discussed in Section VII. of this report:

1. No project.

2. The project as proposed, but with all parking deleted.

3. Provision of maximum office space under proposals in Guiding Downtown Development, July 1982.

4. Provision of a mixed office/residential building on the site under proposals in Guiding Downtown Development, July 1982.

5. Previous 1981 proposal for the site, under current controls.

II. PROJECT DESCRIPTION

A. LOCATION OF THE PROPOSED PROJECT

The proposed 27-story office tower would be located on the south side of Mission St. between Main and Spear Sts. (see Figure 1, below). The site is in the C-3-O (Downtown Office) Use District and the 400-I Height and Bulk District, and occupies Lots 14 through 18 in Assessor's Block 3717. The site is about 137.5 ft. by 183.3 ft. and contains about 25,208 sq. ft.

The site is in an area in which six office buildings (Federal Reserve Bank, Pacific Gateway, 160 Spear St., 100 Spear St., 201 Spear St. and 135 Main St.) are under construction, recently completed, or proposed (see Figure 2, p. 6). The project site contains one two-story concrete building, two one-story brick

FIGURE 1:
PROJECT LOCATION

buildings and two vacant lots. The buildings on the site were formerly used for various commercial purposes. All site buildings are currently vacant. All buildings on the site would be demolished for the project.

B. OBJECTIVES OF THE PROJECT SPONSOR

The proposed project is sponsored by Main and Mission Associates, a California partnership composed of The Shorenstein Company and Mission Associates Ltd., a limited partnership affiliated with Bechtel interests, whose objective is to obtain a return on investment capital by constructing and renting office space in downtown San Francisco. The project is being designed with a mix of large and medium floor sizes for general office use by companies in need of these floor sizes to house clerical, data processing, drafting, engineering and administrative support staff. The project architects are Skidmore, Owings and Merrill, of San Francisco.

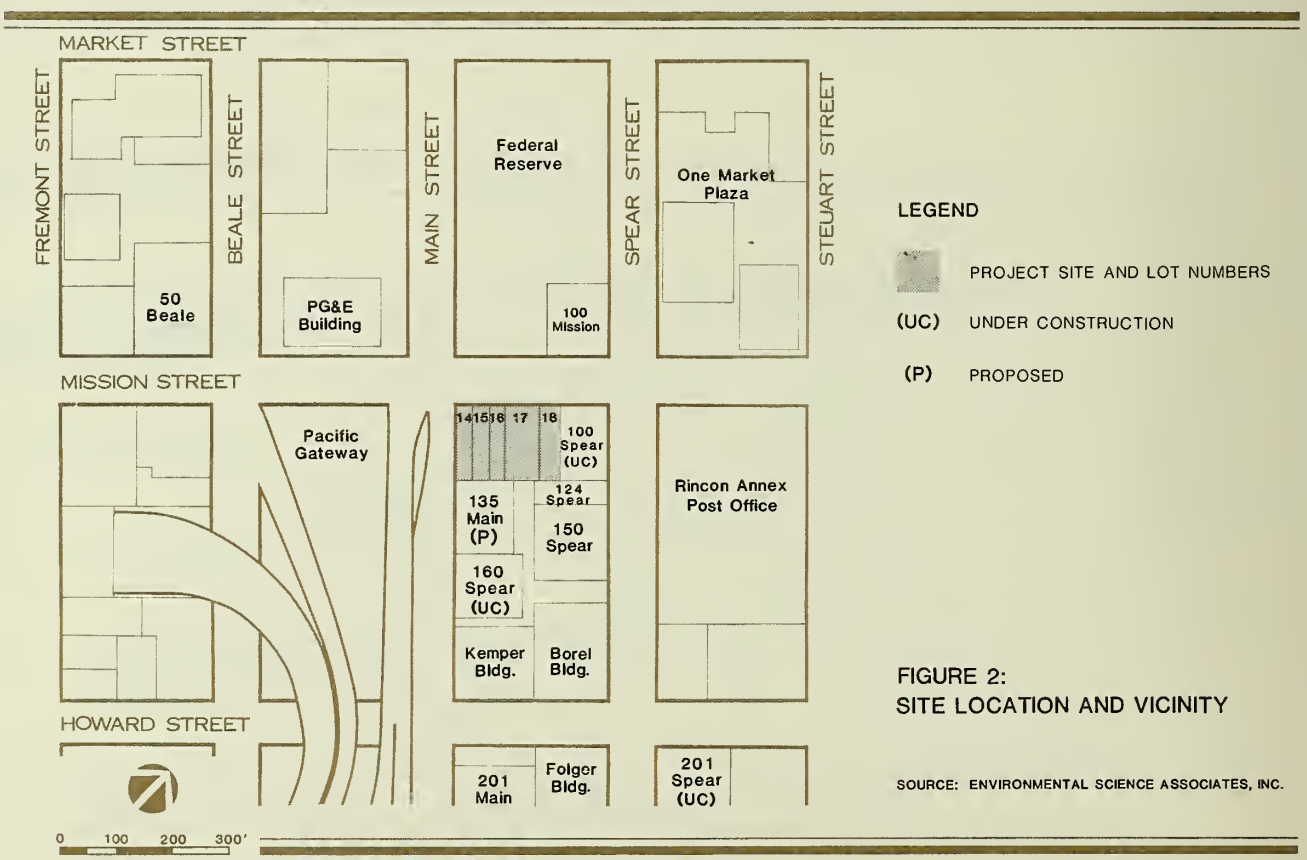


FIGURE 2:
SITE LOCATION AND VICINITY

SOURCE: ENVIRONMENTAL SCIENCE ASSOCIATES, INC.

C. SITE AND BUILDING PLAN

The proposed project would consist of a 27-story office tower. The proposed tower would be about 400 ft. high and contain 22 office floors, two parking floors, a ground floor with lobby and loading space, a basement and two mechanical floors; the total height to the top of the mechanical floor would be 399 ft. The building would measure 155 ft. along Mission St., and 127.5 ft. along Main St. to the eighth level. At the ninth level, the building tower would be set back from the southern property line, approximately 37.5 ft. for a width of 100 ft. above the eighth floor on the building's Main St. frontage. The overall project would have a gross floor area of about 433,490 sq. ft. The area defined by the City Planning Code for purposes of determining compliance with the Floor Area Ratio (FAR) would be 352,900 sq. ft., resulting in an FAR of 14:1 for the project./1/ Table 1 shows distribution of floor area by use.

TABLE 1: PROPOSED FLOOR AREAS

	Gross Building Area (Square Feet)	Gross Area Applicable to FAR* (Square Feet)
Basement	9,350	--
First Floor	10,100	6,940
Parking Level 1	20,500	1,590
Parking Level 2	20,500	1,600
Podium Office Levels (four floors at 20,500 sq. ft. each)	82,000	82,000
Eighth Floor (mechanical)	20,500	--
Office tower levels (15 at 15,000 sq. ft. each, 2 at 13,000 sq. ft. each, 1 at 9,770 sq. ft.)	260,770	260,770
Mechanical Penthouse	9,770	--
Total	433,490	352,900
Less Non-Office FAR Area		-10,130
Total FAR Gross Office Area		342,770

* Area included in gross floor area calculation to determine compliance with San Francisco Planning Code, Section 124.

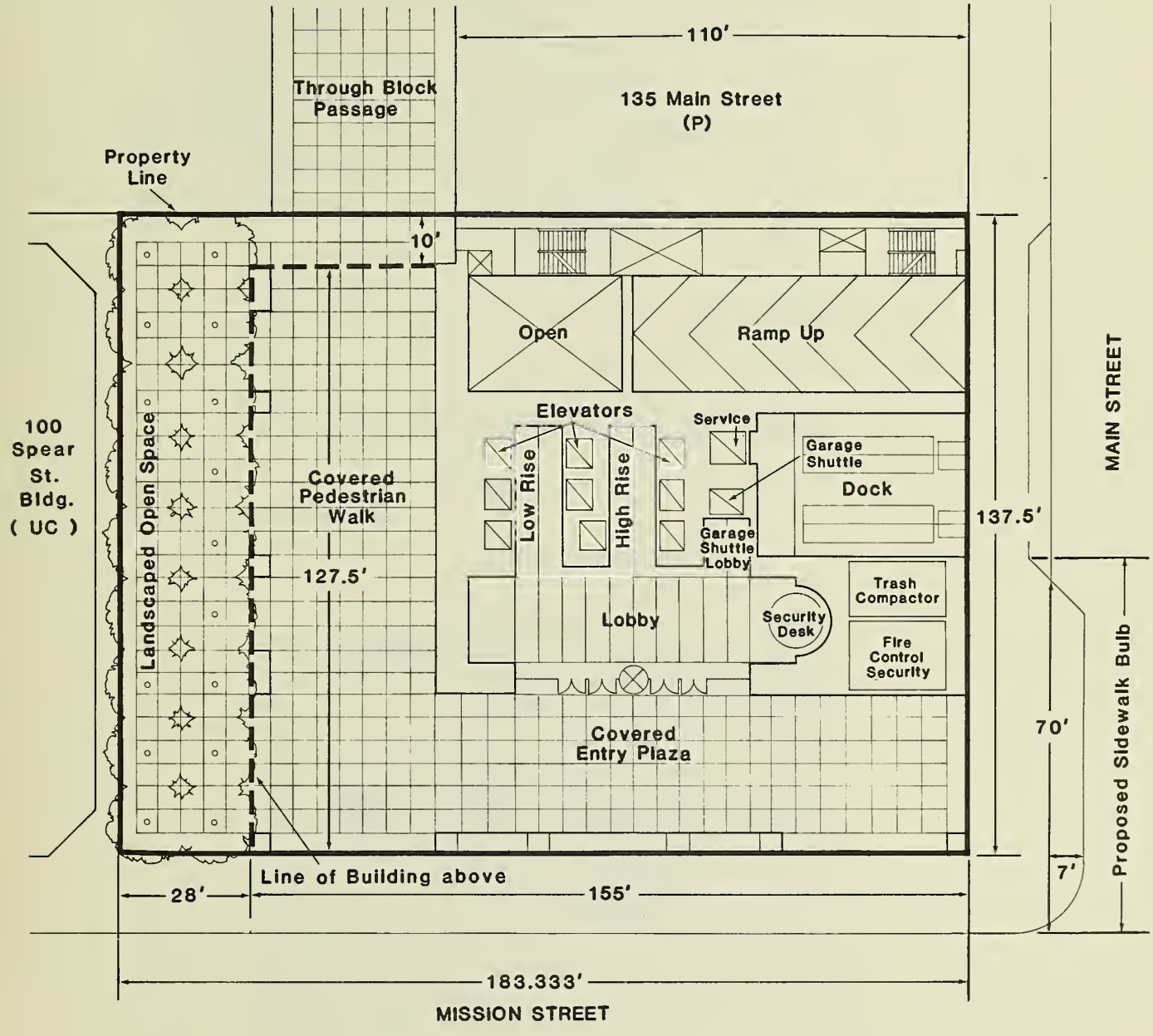
SOURCE: Skidmore, Owings and Merrill

A landscaped open area would be located between the office tower and the 100 Spear St. building under construction east of the site. A covered pedestrian walkway at street level, with a vertical clearance ranging in height from 15-17 ft., would provide access to a north/south through-block pedestrian way. The ground floor of the project would contain the tower lobby and elevators and two loading spaces (see Figure 3, p. 9). The loading dock area would be 12 ft. wide by 35 ft. deep and 14 ft. high. The entrance to the project would be through a covered entrance plaza, accessible from both Mission St. and Main St., as well as the mid-block pedestrian passage.

A partial basement would contain a water storage tank and building equipment (see Figure 4, p. 10). The second and third floors would contain auto parking (39 spaces on the first parking level and 61 on the second with the proposed attended parking layout) and two van loading spaces (see Figure 5, p. 11). The parking ramp would be located on Main St., adjacent to the loading docks. One 70-ft. curb cut would serve both loading spaces and the parking ramp. The sidewalk on Main St. at Mission St. would be extended toward the center of the street as part of the project to provide additional space for pedestrians.The podium section (floors 4 through 7; see Figure 4, p. 10) would contain four floors of 20,500 sq. ft. each. A mechanical floor would be located at the eighth level. Floors 9 through 23 would contain 15,000 sq. ft. each (see Figure 6, p. 12). The uppermost floors (24 through 26) would contain smaller floor areas (see Table 1).

The building would be sculptured at the top (see Figure 7, p. 13), by a series of steps at the 24th, 26th and rooftop mechanical levels. The four corners of the building would be notched to provide articulation of the building mass (see Figure 6). The building tower, starting at the ninth floor would be set back about 40 ft. from the southern property line at the ninth level (see Figure 8, p. 14).

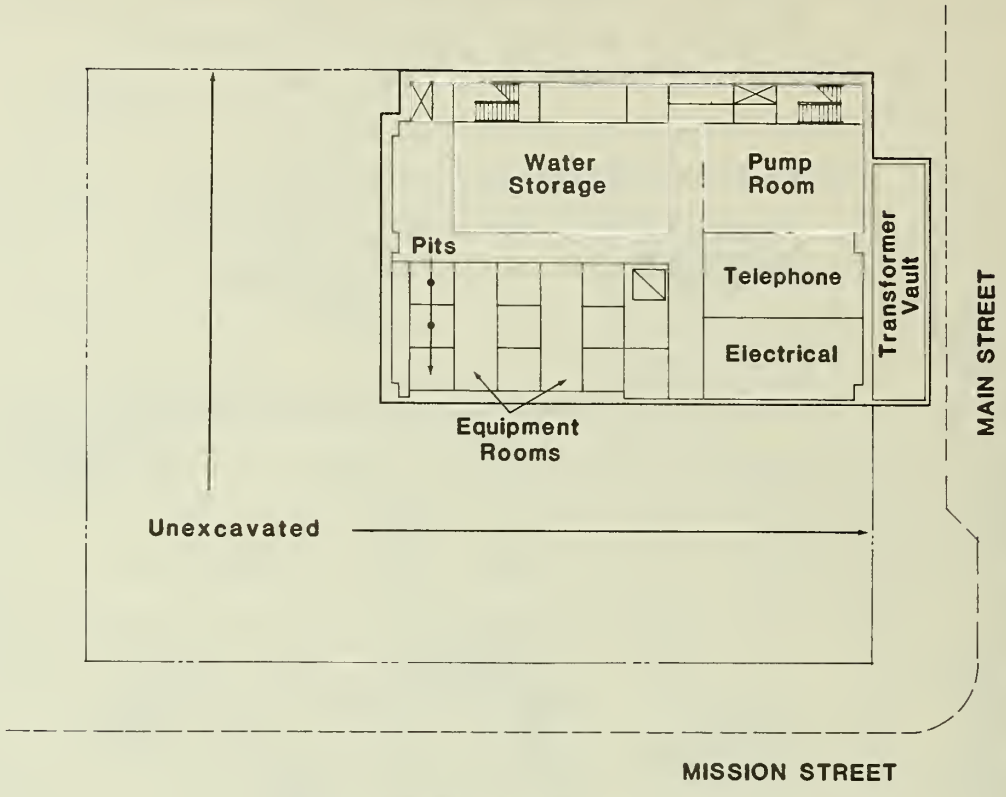
The building facade would be either light-colored travertine or sierra white granite, with clear glass windows. Windows would be located on all four sides of the tower, except on the south wall of the podium section where it abuts the adjacent property.



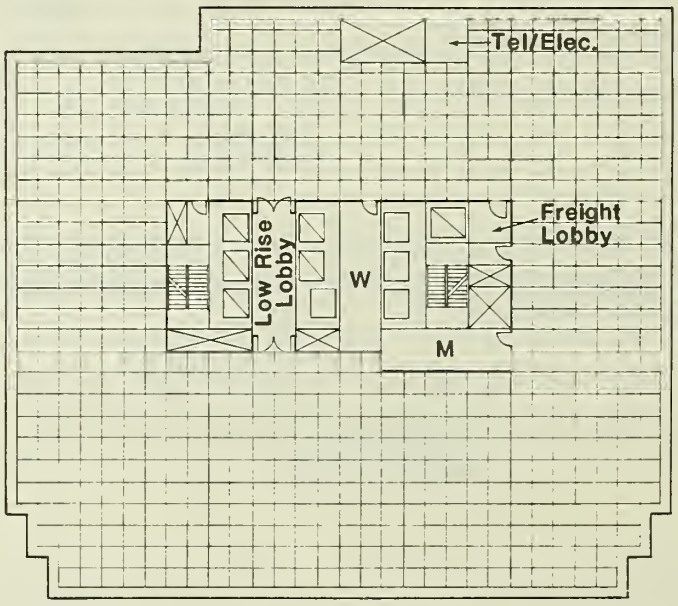
0 20 40'

SOURCE: Skidmore, Owings & Merrill

FIGURE 3:
GROUND LEVEL - LOBBY



BASEMENT FLOOR

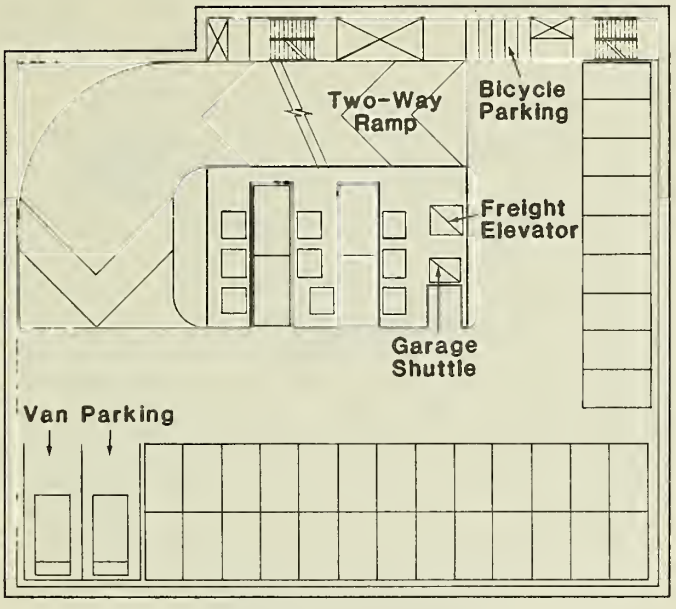


TYPICAL PODIUM FLOOR

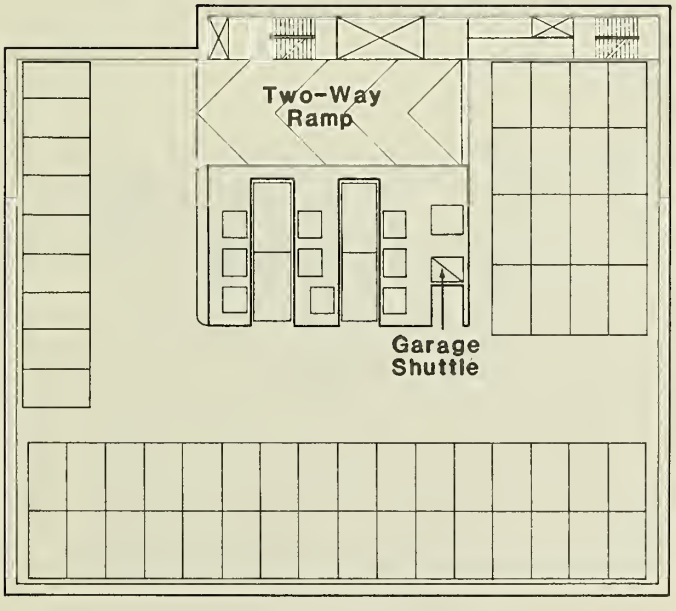
0 25 50'

SOURCE: Skidmore, Owings & Merrill

FIGURE 4: BASEMENT AND TYPICAL PODIUM FLOOR



PARKING LEVEL 1

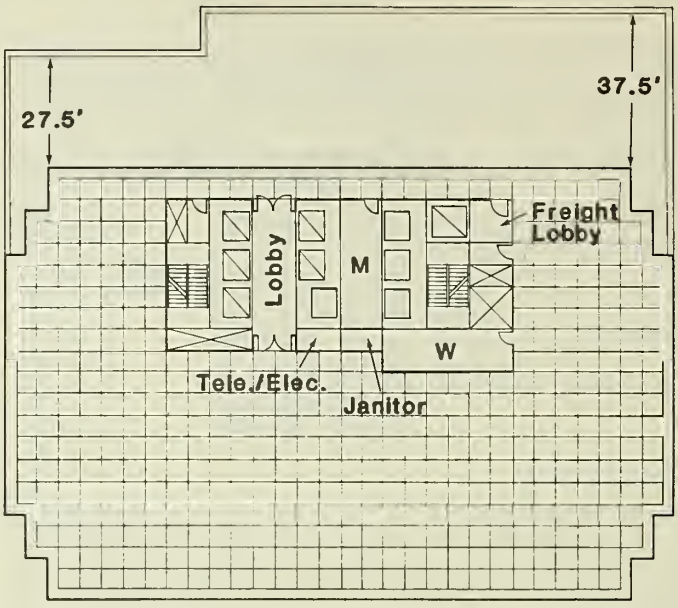


PARKING LEVEL 2

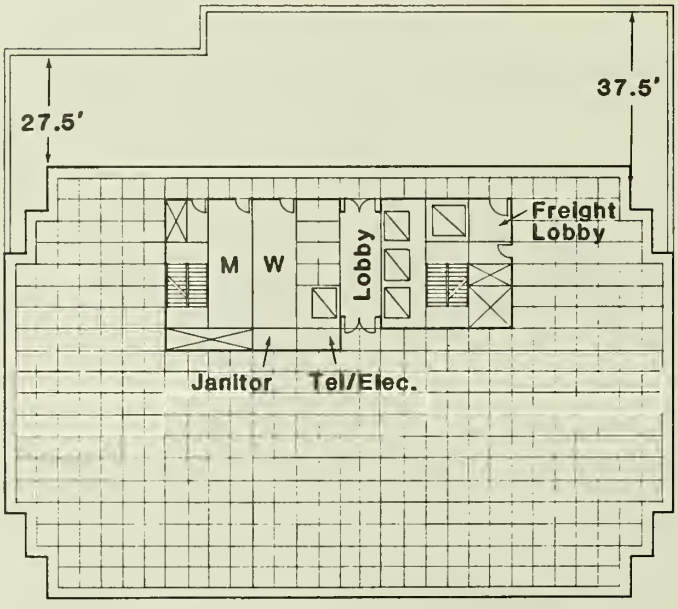
0 25 50'

SOURCE: Skidmore, Owings & Merrill

FIGURE 5:
PARKING LEVELS



TOWER LEVEL LOW RISE

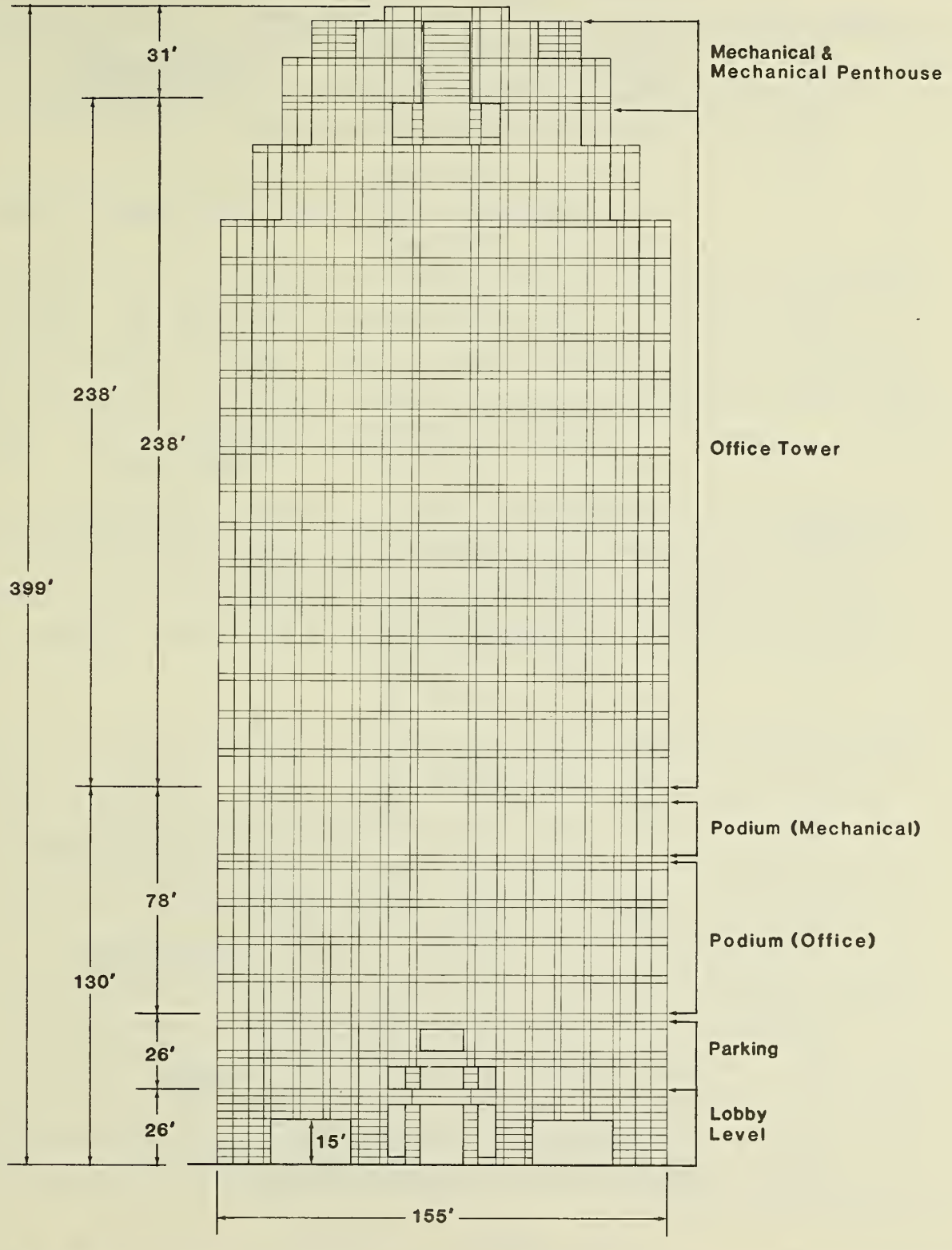


TOWER LEVEL HIGH RISE

0 25 50'

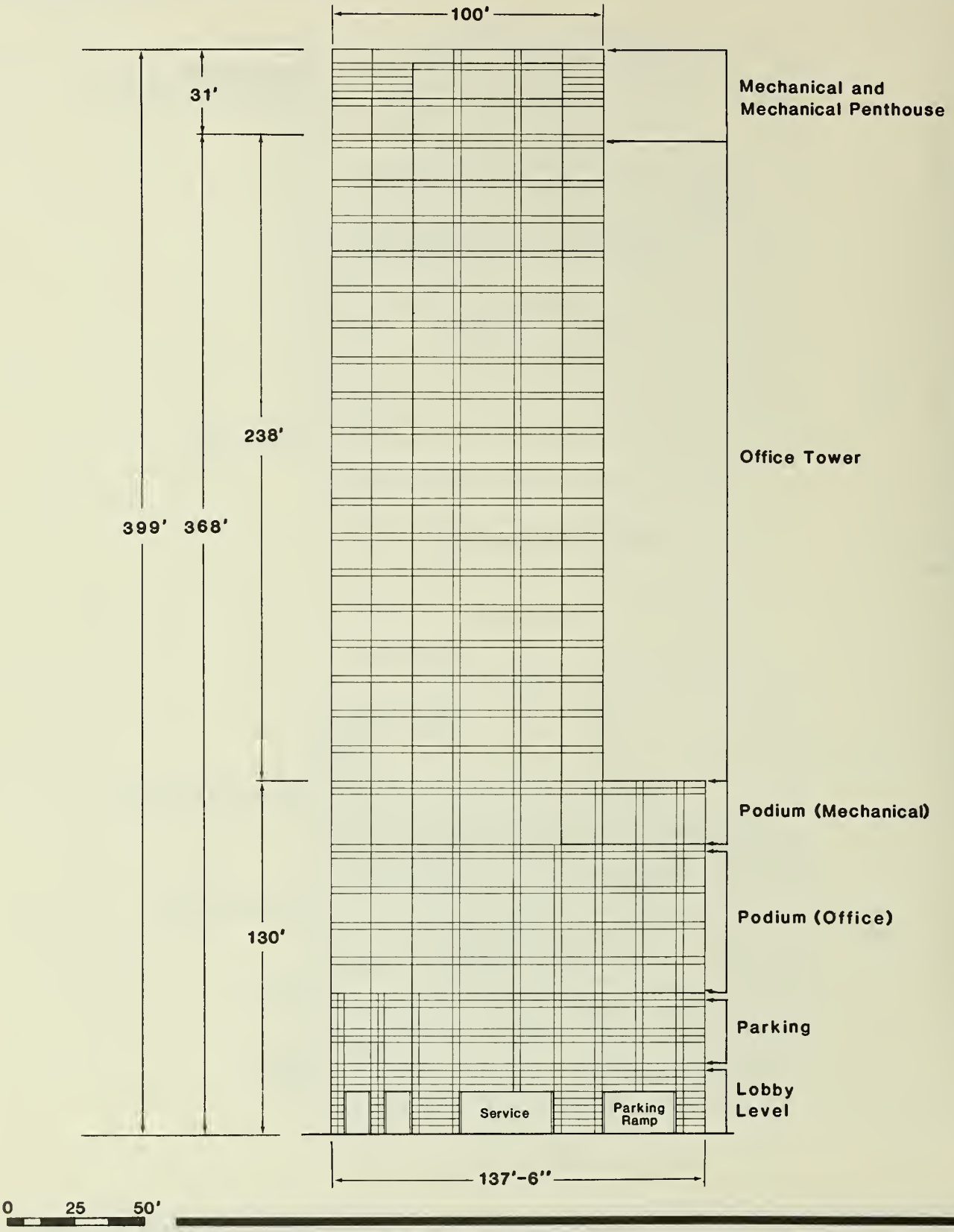
SOURCE: Skidmore, Owings & Merrill

FIGURE 6:
TYPICAL TOWER FLOORS



SOURCE: Skidmore, Owings & Merrill

FIGURE 7:
MISSION STREET ELEVATION



SOURCE: Skidmore, Owings & Merrill

FIGURE 8:
MAIN STREET ELEVATION

A major tenant has not been identified for the office space. It is anticipated that the building would attract institutional and professional users in need of larger floor sizes than found in the typical office building. The project would provide employment for 1,390 persons (1,370 office and 20 security, maintenance and parking; see Table 5, p. 64).

D. PROJECT SCHEDULE, COST AND APPROVAL REQUIREMENTS

Environmental review and detailed project design are expected to be completed by mid-1983. Following permit approvals, demolition and excavation are expected to require 15 weeks, steel erection 20 weeks, exterior finishing 22 weeks, and interior finishing, including electrical and mechanical work, about 48 weeks. Initial occupancy is expected in mid-1985.

Total replacement costs, in 1982 dollars, are projected to be $56 million. This includes indirect costs such as interest, taxes, financing, leasing, management, fees for architects, engineers and other consultants, and land costs. Average rents in the project are expected to be approximately $36 - $40 per sq. ft.

The project complies with the provisions of the City Planning Code currently in effect and does not require conditional use authorization or variances. Following completion and certification of this EIR by the City Planning Commission, the project would be subject to review by the Commission in accordance with Resolution 8474, passed January 17, 1980, establishing a policy of Discretionary Review of all projects in the downtown area. Discretionary Review may result in imposition of conditions for the issuance of permits. Subsequently, the project sponsor would obtain a demolition permit from the Central Permit Bureau of the Department of Public Works, followed by a building permit or permits for compliance with fire, electrical, building and other pertinent City codes, in conformity with conditions established by the City Planning Commission in its Discretionary Review.

NOTES - Project Description

/1/ Floor Area Ratio (FAR) is the ratio of the amount of floor area as defined by the Planning Code, Section 102.8, to the amount of sq. ft. of site area. The permitted FAR in the C-3-O district is 14:1.

III. ENVIRONMENTAL SETTING

A. ZONING AND LAND USE

The project site is in the C-3-O (Commercial-Downtown Office) zoning district as defined in Section 210.3 of the City Planning Code (see Figure 9, below).

The basic Floor Area Ratio (FAR) in the C-3-O zoning district is 14:1, which for this site would be 352,912 sq. ft. A moratorium on the use of floor area bonuses was enacted by the San Francisco Board of Supervisors by Ordinance No. 240-80, effective July 1, 1981. The project site is in the 400-I Height and Bulk District (see Figure 10, p. 18), in which the maximum permitted building height is 400 ft. Above a height of 150 ft. the maximum permitted building length is 170 ft. and the maximum permitted diagonal dimension is 200 ft.

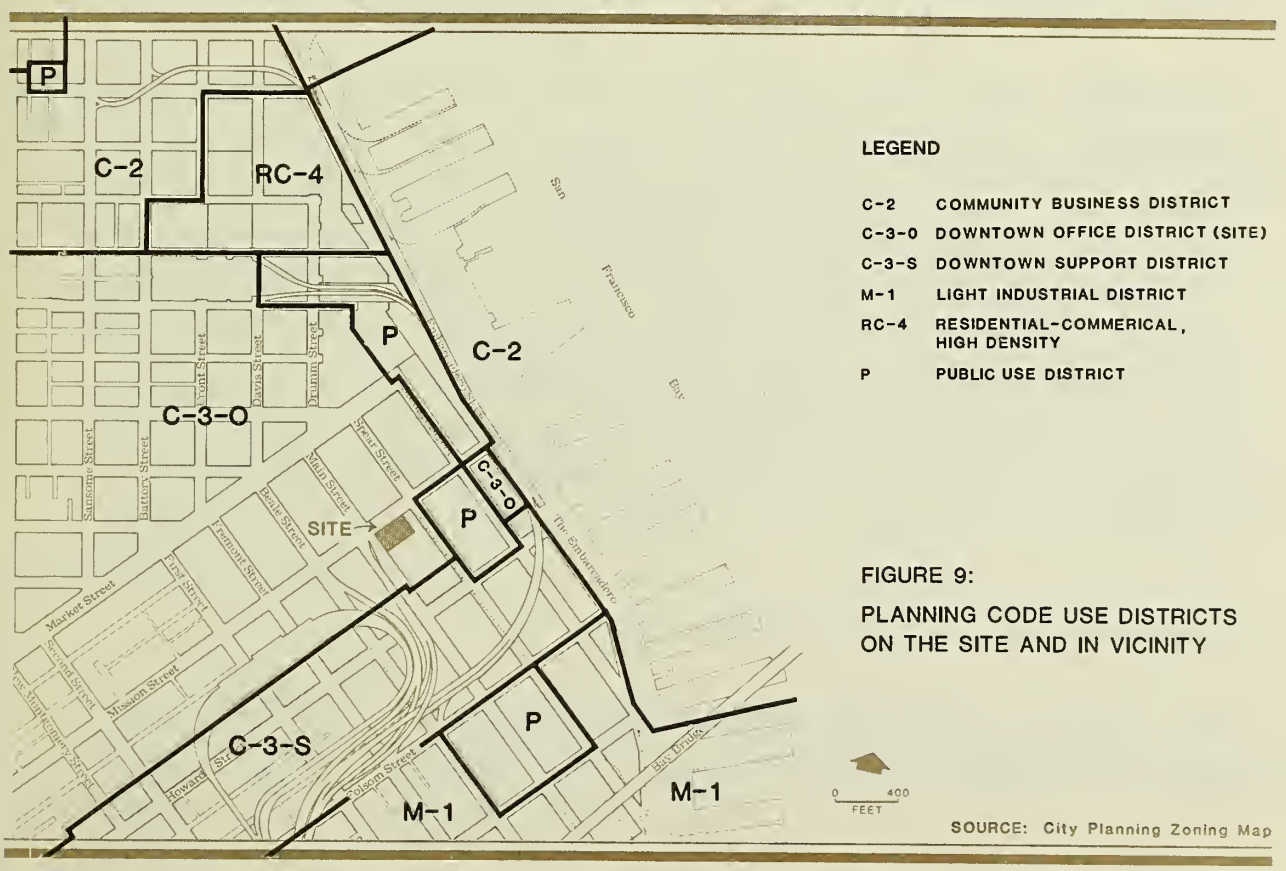


FIGURE 9:
PLANNING CODE USE DISTRICTS ON THE SITE AND IN VICINITY

LEGEND

HEIGHT AND BULK DISTRICTS	HEIGHT LIMIT	HEIGHT ABOVE WHICH MAXIMUM DIMENSIONS APPLY	MAXIMUM BUILDING LENGTH	MAXIMUM DIAGONAL DIMENSION
700-I	700	150'	170'	200'
600-I	600	150'	170'	200'
500-I	500	150'	170'	200'
450-I	450	150'	170'	200'
400-I	400	150'	170'	200'
320-I	320	150'	170'	200'
300-H	300	100'	170'	200'
275-E	275	65'	110'	140'
240-G	240	80'	170'	200'
200-X	200	Bulk limits not applicable		
150-X	150	Bulk limits not applicable		
105-F	105	80'	110'	140'
84-E	84	65'	110'	140'
84-J	84	40'	250'	300'
84-X-1	84	Bulk limits not applicable		
84-X-2	84	Bulk limits not applicable		
65-A	65	40'	110'	125'
65-D-1	65	40'	110'	140'
40-X	40	Bulk limits not applicable		
OS	Conformity with objectives, principles, and policies of the Master Plan			

FIGURE 10:
PLANNING CODE HEIGHT AND BULK DISTRICTS ON THE SITE AND IN VICINITY

SOURCE: City Planning Zoning Map

The project site is in an area south of Market St. which has been undergoing a transition, since the early 1970s, from small-scale, low-rise commercial and service buildings and warehouses, to high- and medium-rise office buildings. This trend, in response to office demand, has resulted in an extension of the Financial District southward from Market St. to Howard and Folsom Sts. Assessor's Block 3717, in which the project site is located, is undergoing such a transition with an eight-story, 109-ft.-high, and a 13-story, 160-ft.-high office buildings on Howard St., an 18-story, 230-ft.-high building at 150 Spear St., a 20-story, 273-ft.-high building under construction at 100 Spear St., a 19-story, 240-ft.-high building under construction at 160 Spear St. and a 22-story, 340-ft.-high building proposed at 135 Main St., adjacent to the project site.

Three vacant buildings are located on the project site: 151 Mission, a two-story concrete building; 131 Mission, a one-story brick building; and 109-115 Mission, a one-story brick building. All the businesses formerly on

the site have relocated in anticipation of the project. Lots 14 and 16 are vacant; the building on Lot 16 was damaged by fire and was demolished in 1980. The building on Lot 14 was declared unsafe under Section 203(A) of the San Francisco Building Code due to a large exterior crack and loose bricks; it was demolished under an emergency exemption from environmental review in late 1982.

Adjacent to the project site to the east, the 101 Mission St. building (now called 100 Spear St.) is under construction (see Environmental Impact Report, file no. EE79.236, August 27, 1981). The four-story brick building previously on that site has been demolished. To the rear (south) of the 100 Spear St. site is a four-story brick building, 120 Spear St., with a restaurant and florist at the street level and office uses on the upper floors. This building has been rehabilitated and is the only building on the block not proposed for redevelopment. To the south of the project site, 135 Main St. (file no. EE81.61) is proposed and 160 Spear St. (file no. EE80.349) is under construction. Other buildings on the project block are the 13-story Kemper office building at the corner of Howard and Main Sts., the 8-story Borel office building at the corner of Spear and Howard Sts., and the recently completed 18-story, 150 Spear St. office building, south of the 120 Spear St. building.

West across Main St. from the site are the Main St. freeway off-ramp and the recently completed 33-story Pacific Gateway Building. North of the project block are the PG&E building, the recently completed Federal Reserve Bank office building, the 100 Mission St. building and the One Market Plaza buildings. South of the project block are two existing office buildings, 201 and 221 Main St., and the Folger Building (converted to office uses). An office building has been approved at 201 Spear St., at the southeast corner of Howard and Spear Sts. Public parking is located under the Embarcadero Skyway south of Howard St.

The Rincon Post Office Annex occupies the entire block east of the project block, bounded by Spear, Mission, Steuart and Howard Sts. The southern half of the block is devoted to post office vehicle loading and parking, including long-distance over-the-road trucks. The plan for the Rincon Point-South Beach

Redevelopment area recommends mixed office and housing uses on this block when the postal service activities are moved to the India Basin Industrial Park (San Francisco Redevelopment Agency, Environmental Impact Report, Rincon Point-South Beach Redevelopment Plan, San Francisco, California, certified December 21, 1980, file no. EE80.267). The block east of Steuart St. between The Embarcadero, Mission and Howard Sts. (the "East St. Row", not in the Redevelopment area) contains buildings ranging in height from three to nine stories. Among these is the Audiffred Building, a designated City landmark which is being restored after a fire, and The Embarcadero YMCA. The Northeastern Waterfront Plan, adopted as a part of the Comprehensive Plan by the City Planning Commission by Resolutions 8481, 8596 and 8781, recommends retention of existing buildings in the block and infilling with buildings of a similar scale for office and housing use above ground level retail uses. The heights of buildings in the block are limited to 84 ft.

Cumulative Downtown Development

San Francisco is the major office center in the Bay Area with approximately 57.2 million gross sq. ft. of office space (see Table A-1, Appendix A, p. 135). During the 1970s, space in downtown office buildings was added at an average rate of about 1.5 million sq. ft. per year. In 1981 and 1982, the average rate of office space additions was about 2 million gross sq. ft. annually. Approximately 32.3 million gross sq. ft. of office space was constructed between 1960 and 1981 (based on Table A-1).

As of January 27, 1983, about 8.9 million gross sq. ft. of office space is currently under construction in downtown San Francisco. About 5.9 million gross sq. ft. has been formally approved but is not yet under construction, and an additional 4 million gross sq. ft. of office space is under formal review. Together these total 18.8 million gross sq. ft. of new office space. About 1.5 million gross sq. ft. of existing office space has been or is proposed to be demolished to clear the sites for these office developments, resulting in a net addition of 17.3 million gross sq. ft. of new office space in downtown San Francisco. If these projects were all completed, San Francisco would have a total of approximately 74.5 million sq. ft. of office space.

The above numbers and the cumulative analyses in this report are based on a list of office buildings, prepared by the Department of City Planning, which on January 27, 1983 were in one of three categories: 1) under formal review by the Department of City Planning; 2) approved but not yet under construction; and 3) under construction. These buildings and the total sq. ft. of office and retail space in each category are listed in Appendix A, Table A-2, p. 137.

The cumulative list contains only those buildings which are, or have been, formally under review by the Department of City Planning and the Department of Public Works. Not included are projects which are in a preliminary planning or speculative stages for which details as to types of use and floor areas of office and retail space are not available. Those projects excluded from the cumulative list are buildings in the Yerba Buena Center (YBC) Redevelopment Area, Southern Pacific Land Company's Mission Bay Project, the Rincon Hill-South Beach Redevelopment Area, and unfunded State and Federal office building proposals. The cumulative list does contain those office buildings in the Yerba Buena Center Redevelopment Area which are under construction or for which Land Disposition Agreements have been approved, and which have definitely identified floor area figures. The San Francisco Redevelopment Agency is currently considering a range of additional amounts of office space for YBC, but the nature and scale, including floor area, are tentative and uncertain. Therefore, potential office space in YBC is not included. The general basis for future development will be in accordance with the Yerba Buena Center Redevelopment Plan as amended. Hotel projects have not been included in the cumulative analyses because hotel uses have different employment, fiscal and service effects, and different peak travel characteristics from office buildings and generally do not significantly affect peak-hour traffic or transit.

B. URBAN DESIGN FACTORS

VISUAL CHARACTERISTICS

The visual setting of the site is dominated in all but the southwest direction by new office buildings and construction activities for the 100 Spear St. and 160 Spear St. buildings, and southwest of the site by vehicular traffic on the Bay Bridge-Bayshore Freeway Main St. off-ramp. Past these buildings, the high-rise office development of downtown is visible, including the One Market Plaza towers to the northeast and the Embarcadero Center buildings to the north. The one- and two-story site buildings (see Figures 11 and 12, pp. 23-24), together with the four-story building southeast of the site, comprise the remaining structures built prior to 1970. These older buildings are built to their lot lines and reflect the small scale of pre-1970 buildings once common in the area. Buildings on the site are not visible from a distance. They are visible from the freeway off-ramp and comprise a part of the intown view first encountered by Bay Bridge and freeway users entering the City at that point.

SHADOWS

Existing shadows in the area are depicted in Figures 20-24, pp. 57-61. See Section IV.B, p. 55, for a discussion of existing shadows.

WINDS

Wind conditions in San Francisco are a determinant of pedestrian comfort on sidewalks and in other public areas. Northwesterly and westerly winds are the most frequent during all seasons in San Francisco./1/

Wind speeds at pedestrian levels are expressed as a proportion of the freestream wind speeds above the turbulent layer of air caused by surrounding development in a wind tunnel test facility./2/ Table 2 shows the relationship between the proportion of the freestream velocity and the definitions of pedestrian-level wind speeds used in this EIR. Due to surface effects, wind increases with height above surfaces. The freestream velocity is the wind

SOURCE: Environmental Science Associates, Inc., 1981.

FIGURE 11:
VIEW OF THE SITE LOOKING SOUTH ACROSS MISSION STREET

SOURCE: Environmental Science Associates, Inc.

FIGURE 12:
VIEW OF THE SITE LOOKING SOUTHEAST FROM MAIN STREET

velocity unaffected by surface effects. The wind speed ratio expresses the relationship between the freestream velocity and the surface wind; therefore, a point having a "very high" wind speed ratio could experience light winds on a near-calm day with a surface wind at a specific location being at a higher velocity than freestream winds. Similarly, a point found to have a "low" wind speed ratio could experience high speeds on an extremely windy day. The freestream velocity is essentially that measured by the National Weather Service at the roof of the Federal Building at 50 Fulton St./3/

TABLE 2: CLASSIFICATIONS OF SURFACE WINDS

Wind Speed Class	Percent of Freestream Speed
Low	0.00 - 0.19
Moderately Low	0.20 - 0.29
Moderate	0.30 - 0.49
Moderately High	0.50 - 0.69
High	0.70 - 1.00
Very High	over 1.00

SOURCE: EE80.268, FEIR, Five Fremont Center, March 12, 1981.

For northwest winds, wind speeds are a low proportion of the freestream velocity in the project area. The presence of the PG&E building results in moderate wind speeds, with gusts on Mission St. between Beale and Main Sts. Wind speeds along Main St. south of Mission St. are low. Although wind speeds are low along the south side of Mission St. between Steuart and Main Sts., high levels of gustiness occur. At midblock in the project block (the 160 Spear St. site), low wind speeds in the west-to-east direction occur.

Overall, the west wind has higher ground-level wind speeds (approximately 25%) at the project block than the northwest wind, and severe gusting and high wind speeds occur on Mission St. between Spear and Steuart Sts. Wind speeds are moderate and gusting reduced, relative to the northwest wind, along the south side of Mission St. between Spear and Main Sts. Moderate wind speeds and unsteady winds occur on Spear St. near the 150 Spear St. building and on Howard St. near the Kemper office building.

NOTES - Urban Design Factors

/1/ Northwesterly and westerly winds are the most frequent winds during all seasons at the Federal Building, 50 Fulton St., San Francisco. Highest frequencies occur in the summer, when winds blow from the northwest 12% to 39% of the time, exceeding 13 miles per hour (mph) 35% and 25 mph 3% of the time; and from the west 15% to 40% of the time, exceeding 13 mph 29% of the time and 25 mph 7% of the time.

/2/ A study of localized mean wind speeds, turbulence and directions at and near the project site for freestream winds from the west and northwest was conducted using a scale model of the site and vicinity in an environmental wind tunnel. See Appendix B, p. 140, for the text of the wind tunnel study.

/3/ Because the ground-level wind speed proportion of the freestream velocity varies proportionately with the freestream velocity, the frequency distribution of ground-level wind speeds can be inferred from the frequency distribution of velocities at the Federal Office Building discussed in Note /1/.

C. HISTORIC AND CULTURAL RESOURCES

The site is located on what was once part of Yerba Buena Cove, which was filled between 1859 and 1869. Records of the National Maritime Museum at San Francisco indicate that the Trescott, which served as a storeship, was moored near Main and Mission Sts./1/ Existing records do not show the final disposition of this ship, but it may have been removed before breaking up, or it may have been buried when the general area was filled.

One of the former buildings on the site, 199 Mission St. (see Figure 11, p. 23) at the corner of Mission and Main Sts., was given a summary rating of "1" (on a scale of a low of "0" to a high of "5") in the citywide architectural survey conducted by the Department of City Planning in 1976./2/ The second survey conducted by the Foundation for San Francisco's Architectural Heritage in 1981 listed buildings in this area and rated this building "C" on a scale ranging from a high of "A" to a low of "D."/3/ The building was not included on the official City List of Architectural and/or Historically Significant Buildings adopted by the City Planning Commission on May 29, 1980. The building was demolished under an emergency exemption from the environmental review process in late 1982, because of a large exterior

crack and loose bricks which were considered hazardous by the Bureau of Building Inspection.

NOTES - Historic and Cultural Resources

/1/ Map: Gold Rush Vessels, Beached, Scuttled and Broken up, copyrighted 1963, National Maritime Museum at San Francisco.

/2/ Department of City Planning, 1974-1976, Survey of Architecturally Important Buildings.

/3/ Foundation for San Francisco's Architectural Heritage, 1981. Heritage rating sheets are on file with the Department of City Planning, Office of Environmental Review, 450 McAllister St., 5th Floor.

D. EMPLOYMENT, HOUSING AND FISCAL FACTORS

ON-SITE EMPLOYMENT

The buildings on the project site are vacant. The last tenant vacated the site during March 1982. The site does not currently supply any employment opportunities. The site formerly provided employment for about 20 persons in six commercial establishments: Wong's Restaurant, Kuret Photographers and Golden Dragon Publishing were located in the building formerly at 199 Mission St.; Tom's Liquors was located at 131 Mission St.; and Patrick's Sandwich and Daman-Nelson Travel were located in the building at 109-115 Mission St.

SAN FRANCISCO AND REGIONAL OFFICE SPACE MARKET

Vacancy Rates/Commercial Rents

Based on an October 1982 survey of about 290 buildings citywide, the San Francisco Building Owners and Managers Association (BOMA) reported a citywide vacancy rate of 6%./1/ This rate is an increase over the 3.69% rate reported by BOMA in an earlier 1982 survey. According to a December 1982 Coldwell Banker survey, the vacancy rate in downtown San Francisco office buildings (new, existing and major renovations) was 5.7% between September 30, 1982 and December 31, 1982./2/ The 5.7% rate is an increase from 3.6% reported in September 1982. The current 5.7% vacancy rate is the sixth lowest in the

nation among major downtown financial districts./2/ For comparison, the December 31, 1982 vacancy rate is 10.3% nationally; 8.3% for Chicago; 3.3% for downtown Manhattan; and 10% for Dallas./2/

Both surveys indicate a short-term upturn in the downtown office vacancy rate. The recent increase in the downtown vacancy rate is a result of several factors, including an increase in the amount of available office space (due to new space being completed, space available for sublease and an expanding supply of rehabilitated space in older buildings, the amount of latent demand is being reduced), a short-term decrease in the demand for office space, and the national economic recession. The higher vacancy rates indicate a softer office market than has existed in recent years. However, vacancy rates below 5%-7% indicate that demand remains strong in relation to available supply and office space occupancy as measured in square footage is at an all time high./2/

The historic shortage of office space in San Francisco has stimulated office development and increased the demand for office space elsewhere in the Bay Area. Some businesses have moved their clerical, support and noncorporate functions to outlying areas while maintaining headquarters and main branch offices in San Francisco. The City of Oakland and San Mateo and Contra Costa Counties, in particular, are experiencing increased demand from businesses relocating from San Francisco. For example, approximately 6.0 million sq. ft. of office space in nine new buildings are currently proposed for the City of Oakland over the next 10 years, perhaps 27.2 million sq. ft. of office and retail area is projected in Conta Costa County and 13.5 million sq. ft. of office and 1.8 million sq. ft. of retail area is projected for the Highway 101 corridor in San Mateo County./3/

Due to historically high demand and increased construction costs, interest rates, land prices and operation expenses, annual rents for commercial office space in the downtown Financial District have tripled in the last decade (from $8.50 per sq. ft. in 1970 to about $30 per sq. ft. in 1981)./4/ Current annual rents in older buildings in the Financial District are less expensive than new highrises, averaging between $20-$35 per sq. ft. and $12-$28 per sq. ft. south of Market St./5/ San Francisco annual rents now average $35 to $50 per sq. ft. in new highrise buildings. These compare to average commercial

rents in Oakland of $15 per sq. ft.; on the Peninsula of $18-$30 per sq. ft.; and Contra Costa County of $18-$20 per sq. ft./5/ Should the recent rise in vacancy rates continue, the upward pressure on current and future commercial rents would be expected to decline proportionately in San Francisco and outlying areas. Such market conditions could be beneficial to future lessees of office space.

HOUSING

Both regional and San Francisco housing stock are characterized by low growth rates, low vacancy rates, and high purchase and rental costs in relation to typical wages paid. This combination of factors and high interest rates, increased construction costs and the fact that development is approaching maximum permitted densities in the City, have tended to constrict the supply and affordability of housing in San Francisco.

San Francisco had about 316,400 occupied housing units according to the 1980 U.S. Census; about two-thirds of the housing stock is rented and one-third is owner occupied./6/ About 15,000 units were constructed between 1970 and 1979 in the City. The number of new single- and multiple-housing units in San Francisco (authorized by building permits) decreased 34.4% between 1979 and 1980./7/ Housing starts in 1982 totalled about 1,550 units; of these, about 830 were low- and moderate-income units and about 720 were market rate units./8/

The average 1980 market value of a single-family house was $140,000 in the Bay Area and $148,000 in San Francisco./9/ The 1980 Census reports a 1980 median value of $104,600 for single-family units (not including condominiums), and a vacancy rate of 1.0% for owner-occupied dwellings./10/

According to a nonrandom survey of newspaper advertisements by the Department of City Planning in 1980, median advertised rents ranged from $289 for a studio apartment to $588 for a unit with 3+ bedrooms, and averaged $455 for all types of units. Census data for 1980 indicated a median rent in the City of $267 and a vacancy rate of 4.2% for rental units./10/ Census rental data include residential hotels and subsidized housing. A survey conducted by the

Federal Home Loan Bank of San Francisco between August and November of 1981 indicated a vacancy rate of 0.7% for multifamily units and 1.3% for single-family houses./11/ A vacancy rate of 4% to 5% indicates a competitive market; the very low rate in San Francisco means people who are looking for housing are having difficulties finding new residences and there is excess demand pressure which may cause price increases.

FISCAL

Property Tax Revenues

The assessed value of the project site in 1982 was approximately $2.45 million./12/ Based on the fiscal year 1982-83 property tax rate of $1.17 per $100 of assessed value, the project site generated about $28,700 in property tax revenues. The distribution of these revenues is shown in Table 3.

TABLE 3: DISTRIBUTION OF PROPERTY TAX REVENUES, FISCAL YEAR 1982-83

Agency	Ad Valorem Tax Rate*	Percent*	Revenues**
City and County of San Francisco			
General Fund	$0.874	74.7	21,429
Open Space Acquisition	0.025	2.1	613
Bond Repayment	0.099	8.4	2,422
S.F. Community College District	0.014	1.2	354
S.F. Unified School District			
General Purpose	0.078	6.7	1,911
Debt Service	0.008	0.7	206
Bay Area Air Quality Management District	0.002	0.2	51
BART			
General Fund	0.006	0.5	155
Debt Service	0.063	5.4	1,539
TOTAL	$1.17	100.0	$28,680

*Rounded
**Based on the 1982-83 composite tax rate of $1.17 per $100 of assessed value.

SOURCE: San Francisco Controller's Office

Other Taxes

The site is currently vacant and generates no additional tax revenue for the City and County of San Francisco.

NOTES - Employment, Housing and Fiscal Factors

/1/ Elmer Johnson, Building Owners and Managers Association, telephone communication, December 22, 1982.

/2/ Coldwell Banker, "Office Vacancy Index of the United States," September 30, 1982. San Francisco vacancy rates are part of a national survey of 24 major downtown districts conducted quarterly. A copy of the September 30, 1982 survey is on file and available for public review at the Office of Environmental Review, 450 McAllister St., 5th Floor.

/3/ City of Oakland, Department of City Planning, "Major Buildings in the Central District," January 26, 1982; People for Open Space, October 1982, Proposed East Bay Office Industrial Development; and Metropolitan Transportation Commission, September 17, 1982, Draft Report - Travel Impacts of Proposed Development on the Peninsula along Route 101.

/4/ Department of City Planning Memorandum to the City Planning Commission, "South of Market Interim Controls," January 26, 1982.

/5/ James Osmond, Senior Broker, Coldwell Banker, San Francisco Office, telephone communication, January 4, 1983; Mr. Emory, Senior Commercial Real Estate Broker, Grubb and Ellis, San Francisco Office, telephone communication, January 3, 1983; Scott Newman, Senior Broker, Coldwell Banker, Oakland Office, telephone communication, January 6, 1983; and Jan Lunquist, Coldwell Banker, San Mateo Office, telephone communication, January 6, 1983.

/6/ Association of Bay Area Governments (ABAG), "Census Data Bulletin No. 6," March 1982.

/7/ San Francisco Progress Real Estate Guide, November 5, 1982 "'82 Homes Built for Moderate Income Buyers", based on information obtained from the Mayor's Office of Housing and Community Development.

/8/ ABAG, Housing Activity Report, Number 3, May 1981.

/9/ Security Pacific Bank, "Monthly Summary of Business Conditions - Northern Coastal," March 31, 1981, p. 2.

/10/ City Planning and Information Services, "1980 Census Information," March 1982.

/11/ Federal Home Loan Bank of San Francisco, "San Francisco County Housing Vacancy Survey," May 1982.

/12/ San Francisco Controller's Office.

E. TRANSPORTATION

Street System

The site is within the Downtown Core automobile control area designated in the Downtown Transportation Plan of the Transportation Element of the San Francisco Comprehensive Plan./1/ This area is described in the Plan as "that intensely populated area which functions as a financial, administrative, shopping and entertainment center where priority must be given to the efficient and pleasant movement of business clients, shoppers and visitors; where a continuing effort should be made to improve pedestrian, transit and service vehicle access and circulation; where priority for the use of limited street and parking space within this core should be available for these functions; and where a continuing effort should be made to reduce the impact of the private commuter vehicle." Bordering the site on the south is the area designated as a parking belt, which is considered as "appropriate for short-term parking facilities."

Freeway connection with the East Bay, San Francisco Airport and the Peninsula is provided by the pair of ramps opposite the site at Main and Mission Sts. (off-ramp) and at Beale and Mission Sts. (on-ramp). Other ramps connecting with the Bay Bridge are at First and Harrison Sts. (on) and at Fremont St. between Howard and Folsom Sts. (off). The next nearest ramps connecting with the James Lick Freeway are at Fourth and Harrison Sts. (on) and Fourth and Bryant Sts. (off).

Main St. is one-way northbound and has three travel lanes, which narrow to two lanes at Mission St., and curbside parking on both sides in the project block. The Main St. off-ramp has three approach lanes at the intersection with Mission St. No right turns are permitted from the ramp across Main St. to eastbound Mission St.; one left-turn lane is provided to westbound Mission St.

Mission St. operates as a two-way, four-lane street; west of Beale St. the outer lanes are designated diamond lanes for bus use only from 7:00 a.m. to 6:00 p.m. Howard St. is two-way east of Fremont St. and one-way westbound

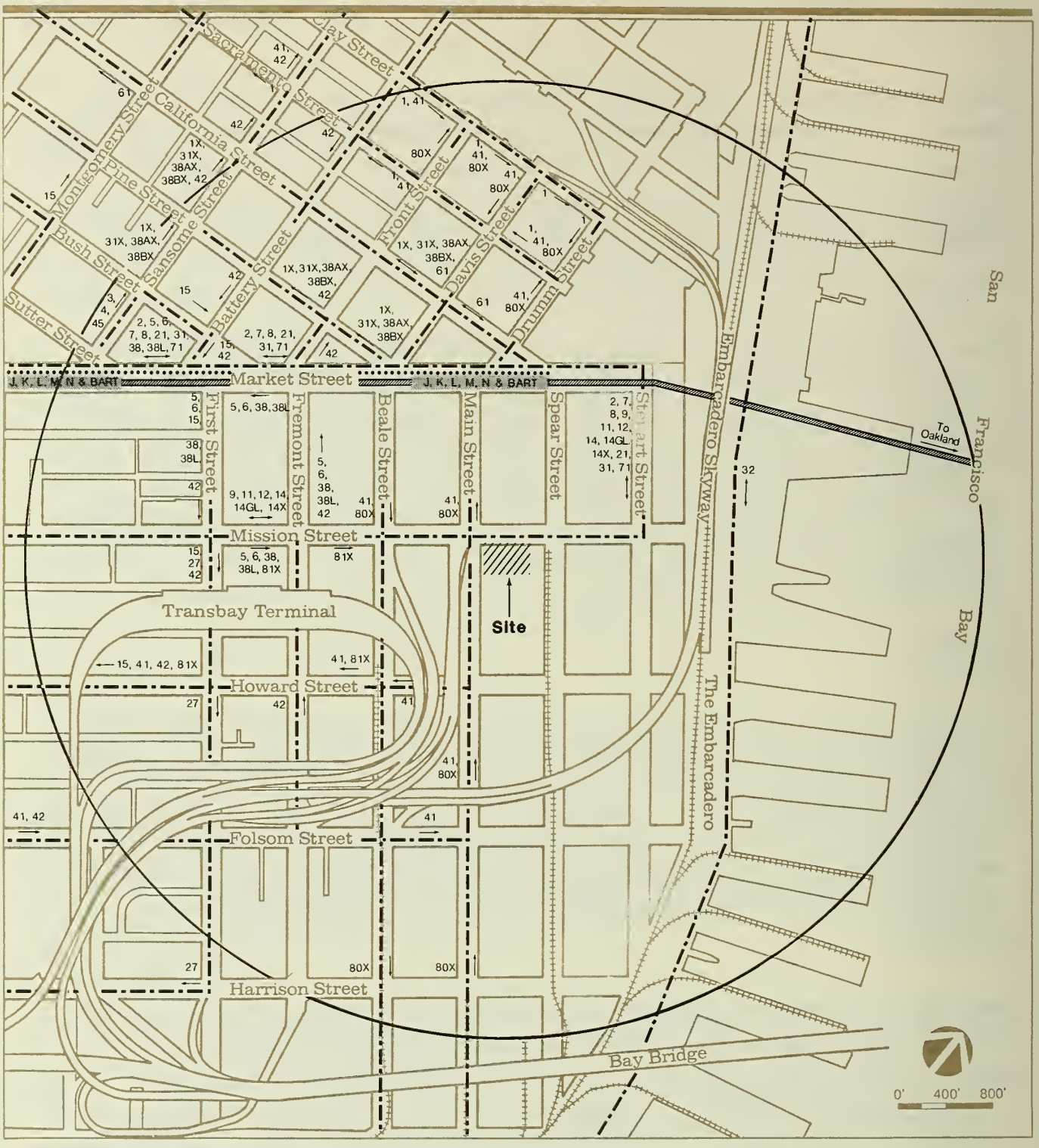
west of Fremont St. Fremont St. is a four-lane, one-way street northbound. Beale St. is one-way southbound with four lanes north of Mission St. and three lanes south of Mission St. Spear St. is a one-way, three-lane street, southbound, and is controlled by four-way stop signs at its intersection with Howard St. The other three intersections on the periphery of the project block are controlled by traffic signals.

Most streets in the project vicinity are given special designations in the Transportation Element of the San Francisco Comprehensive Plan. Main, Beale, Steuart, Market and Howard Sts. are designated major thoroughfares in the Thoroughfares Plan./2/ In the vicinity of the site, Market and Mission Sts. are designated Transit Preferential Streets. Two blocks east of the site, Steuart St. between Market and Mission Sts. is so designated, as is Fremont St. two blocks west of the site.

Transit

The project site is served by San Francisco Municipal Railway (Muni), electric trolley and motor coach lines, and by light rail vehicle lines which serve the Embarcadero Station of the Muni Metro system in the Market St. subway one block north of the project site. Of the 76 Muni routes, 40 lines serve the area within 2,000 ft. of the site. Routes of Muni lines and the location of the subway station in the more immediate project vicinity are shown in Figure 13.

Mission St. carries six Muni lines in the project vicinity, of which one has limited stops (14GL - Guerrero Limited) and one which is express (14X - Mission Express) (see Figure 13, p. 34). Of the other street segments bordering the project block only Main St. carries Muni routes. The Muni routes operating on Main St. are the 41-Union line which serves North Beach, Russian Hill and Cow Hollow, and the 80X-Gateway Express line, which provides express service between the Southern Pacific Station at Fourth and Townsend Sts. and a curbside terminal on Front St. between Sacramento and Clay Sts. The 80X serves the site from a far-side stop on Main St. at Mission St. in the morning and at Beale and Mission Sts. in the afternoon.



BART and Muni Metro Station

BART Route

Muni Metro Subway Route

Transit Route

1, 2, 3, J, K, L Route Designations

Route Direction

2000' Radius

FIGURE 13: BART & MUNI ROUTES NEAR THE PROJECT SITE

SOURCE: San Francisco Municipal Railway Map, January 1982

Regional service is provided to and from the East Bay by the Bay Area Rapid Transit District (BART) from the Embarcadero Station, and by Alameda-Contra Costa (AC) Transit District motor coaches from the Transbay Transit Terminal located at Mission and First Sts. about 700 ft. west of the project site. Peninsula service is provided by the Southern Pacific Transportation Company (SP) from a train terminal at Fourth and Townsend Sts., and by the San Mateo County Transit District (SamTrans) which has bus routes and stops along various streets in the area, including Mission St., as well as transfer connections at the Daly City BART station.

The Golden Gate Bridge, Highway and Transportation District (Golden Gate Transit) provides peak-period bus service to and from Marin and Sonoma counties from a.m. stops on Battery St. and First St. near Market St., and p.m. stops on Fremont St., two blocks west of the project site, and on Pine and Sansome Sts., three blocks northwest of the site. It also provides all-day service from the Transbay Transit Terminal, and from stops along Howard and Folsom Sts. From the Ferry Building, Golden Gate Transit provides ferry service to terminals in Larkspur and Sausalito, and Harbor Carriers, Inc., provides ferry service to Tiburon.

Golden Gate Transit also operates a van-pooling program to North Bay areas not served by existing motor coach routes. The RIDES car-pooling program, operated under the auspices of a nonprofit, publicly funded corporation, provides consulting and matching services to help establish Bay Area van and car pools. Also, independently owned and operated jitneys operate on Mission St. during peak traffic hours.

Some Muni lines serving the site area operate with outbound passenger loading in excess of seated capacity during the p.m. peak hour. On these congested lines many vehicles leave the Downtown area with little or no available standing room (see Appendix D, Table D-2, p. 165 and Figures D-1 to D-3). In addition to Muni, SamTrans and BART exceed their seated capacities during peak hours but operate at less than 100% of total capacity (see Table D-1, p. 162). The other transit agencies are operating during their peak hours at less than 100% of their seated capacity. Although the other agencies operate at less than seated capacity during a one-hour period, specific routes

experience loadings in excess of seated capacity for periods of from five to 30 minutes during the peak hour. In the experience of most agencies, the p.m. peak is more intense than the a.m. peak (see Appendix D, Table D-1, p. 162).

Pedestrians

At present, during the p.m. peak hour, the Main St. sidewalk in front of the site has pedestrian volumes that occupy 10% of the available capacity (defined as impeded). The Mission St. sidewalk in front of the site, during the p.m. peak hour presently has volumes that occupy 4% of the available capacity (open). Table D-4, p. 169, categorizes the condition of pedestrian flows for different volumes, e.g., open, impeded, crowded, jammed, which correspond to the percent of available capacity used. Noon-hour pedestrian conditions are similar to p.m. peak hour conditions in the project vicinity. During noon-hour pedestrian volumes on the Main St. sidewalk adjacent to the project site occupy 9% of the available capacity; pedestrian volumes on the Mission St. sidewalk adjacent to the site use 3% of the available capacity.

The Mission St. sidewalk across the street from the site would be affected by the project's pedestrian travel. Currently, during the p.m. peak hour, this sidewalk segment has pedestrian volumes that occupy 3% of available capacity (impeded). The Main St. sidewalk at this (the northeast) corner during the p.m. peak hour presently has volumes that occupy 6% of the available capacity (open). Noon-time pedestrians on these two sidewalk segments use 1% of the available capacity on the Mission St. sidewalk and 6% of the available capacity on the Main St. sidewalk.

During the p.m. peak hour, the crosswalk crossing Mission St. in front of the site (east crosswalk) has volumes that occupy 13% of available capacity (unimpeded) and the crosswalk crossing Main St. in front of the site (south crosswalk) has pedestrian volumes that occupy 15% of available capacity (open). The crosswalk crossing Main St. at the north side of the intersection (north crosswalk) has pedestrian volumes that occupy 12% of available capacity (impeded) during the same time periods. Noon-time conditions are similar to the p.m. peak hour with pedestrians using 11% of the available capacity of the east crosswalk. Pedestrians in the south crosswalk use 10% of the capacity

during noon hours. Noon-time pedestrians use 15% of the available capacity in the north crosswalk.

Traffic

A capacity analysis of key intersections in the project vicinity shows the intersections at Mission and Beale Sts. and at Mission and Main Sts. operating at Level of Service D during peak hours (see Table D-5, Appendix D, p. 171, for descriptions of Levels of Service). Pedestrians in the north crosswalk interfere with left-turn movements from eastbound Mission St., contributing to congestion there. Other intersections in the project vicinity (Mission and Spear Sts. and Main and Howard Sts.) currently operate at Level of Service C or better.

Parking

There are 24 one-hour metered parking spaces on both sides of Main St. between Howard and Mission Sts. A designated loading zone is located on Main St. adjacent to the site. On the south side of Mission St. between Main and Spear Sts. are a bus stop, a loading zone and three metered parking spaces. The metered parking spaces are designated as a tow-away zone between 4 p.m. and 6 p.m.

Long-term parking facilities are located south and west of the project site (see Figure 14, p. 38). Pricing in these areas favors long-term parking as the maximum cost is accumulated within two or three hours at the short-term rate.

A survey of existing long-term (greater than six hours) off-street parking available to the public within walking distance (2,000 ft.) of the project site was conducted (see Figure 14, p. 38)./3/ In this area there are a total of about 9,930 long-term, commercially available off-street spaces, of which 320 were vacant on a daily basis at the time the survey was conducted, or an average occupancy of about 97%. Of these, 880 spaces are located on six sites that are proposed for future office development.

Project Site

Parking

---- Parking beneath freeways

FIGURE **14:** PARKING IN THE VICINITY OF THE PROJECT SITE

SOURCE: City Planning Department, 1982

NOTES - Transportation

/1/ Department of City Planning, 1972, amended 1982, Transportation Element of the Comprehensive Plan.

/2/ "Major Thoroughfares" are defined in the Transportation Element of the San Francisco Comprehensive Plan as those "whose primary function is to link districts within the city and to distribute traffic from and to the freeways" (page 19).

/3/ Parking data is from a 1982 inventory conducted by the Department of City Planning, memorandum from Dean Macris, Director of Planning, to the City Planning Commission, December 16, 1982.

F. AIR QUALITY

The Bay Area Air Basin in which the project site is located has been designated by the California Air Resources Board (ARB) as a nonattainment area/1/ for ozone (oxidant), carbon monoxide (CO) and total suspended particulates (TSP); San Francisco proper is also a nonattainment area for ozone and CO. The standards for these pollutants are now and are expected to be exceeded periodically. Ozone standards are most likely to be exceeded on warm, calm days in the months of May through October, CO maximums usually occur when winter-season temperature inversions coincide with evening traffic peaks, and TSP levels are highest during the dry summer months.

The Bay Area Air Quality Management District (BAAQMD) operates an air quality monitoring station about 2 miles south of the site on 23rd St. east of Potrero Hill. A three-year summary of San Francisco data collected, the corresponding air quality standards, and a discussion of major pollutants are shown in Appendix E, p. 179. These data are representative of the site with the exception of those for CO and total suspended particulates, which are strongly influenced by local traffic.

The highest annual pollutant concentrations in San Francisco, while exhibiting high variability due to meteorology, have shown an overall improvement during the 1971-1981 period. No similar trend in the annual number of excesses has been noted. However, excesses are infrequent; only the standard for TSP was exceeded in 1980.

CO and TSP concentrations are localized in time and space, varying with activity levels and meteorology. In contrast, ozone concentrations, which arise from complex chemical reactions involving hydrocarbons and nitrogen oxides, are highest downwind of sources.

The 1982 Bay Area Air Quality Plan proposes additional control strategies to attain and maintain the various standards by 1987 in the District./2/ These strategies include stationary source and mobile source emission controls and transportation improvements implemented by ARB, BAAQMD and the Metropolitan Transportation Commission. The most difficult standards to meet are those for ozone. The Plan proposes no additional controls on nitrogen oxides, but proposes a 31% reduction in hydrocarbon emissions from 1979 levels to meet the ozone (oxidant) standard by 1987. The District is expected to be in compliance with the CO standard by 1987, if a motor vehicle inspection and maintenance program is adopted by the state legislature.

Using methods recommended by the BAAQMD, worst-case existing CO concentrations at sidewalks in the project vicinity were calculated. The results of these calculations are shown in Table 11, p. 94. Concentrations in excess of the eight-hour standard were found at Beale St. and Main St. south of Mission St. Calculations indicate that the one-hour standard is not exceeded at any point in the vicinity of the project.

NOTES - Air Quality

/1/ A non-attainment area is one in which the federal air quality standard for the designated pollutant has been violated.

/2/ Association of Bay Area Governments, BAAQMD and the Metropolitan Transportation Commission, 1982, Bay Area Air Quality Plan, July 1982.

G. NOISE

The ambient noise of the project site, typical of downtown San Francisco, is primarily determined by vehicular traffic, especially the Main St. off-ramp 64 ft. west of the site. Trucks, buses, automobiles and emergency vehicles, as well as construction equipment, are the major contributors to the level of noise. The Environmental Protection Element of the San Francisco

Comprehensive Plan indicates a day-night average noise level (Ldn)/1/ of 75 dBA/2/ on Mission St. and 70 dBA on Main St./3/

NOTES - Noise

/1/ Ldn is an averaged sound level measurement based on human reaction to cumulative noise exposure over a 24-hour period, taking into account the greater annoyance of nighttime noises (noise between 10 p.m. and 7 a.m. is weighted 10 dBA higher than daytime noise).

/2/ Decibel (dB) is a logarithmic unit of sound energy intensity. Sound waves, traveling outward from a source, exert a force known as sound pressure level (commonly called "sound level"), measured in decibels. dBA is decibel corrected for the variation in frequency response of the typical human ear at commonly-encountered noise levels.

/3/ Department of City Planning, Environmental Protection Element of the Comprehensive Plan, September 1974, page 18.

H. ENERGY

Electricity and natural gas are provided to San Francisco by Pacific Gas and Electric Company (PG&E). New demands for electricity in Northern California will be met primarily from coal, nuclear and hydroelectric sources. Co-generation, wind and additional geothermal power developments will also be used to supplement existing supplies. PG&E owns geysers at Geyserville; unit 17 (110 megawatts - MW) has just begun operation and unit 18, also 110 MW, is scheduled to begin operation in May 1983. Among the major new power plants expected by PG&E are the Diablo Canyon nuclear plant and the Helms Pump Storage hydroelectric plant. Both projects are expected to have their first units come on line in spring 1983; Diablo Canyon is awaiting completion of seismic safety studies and must receive an operating permit from the Nuclear Regulatory Commission before it may begin operation. No other nuclear power plants are planned for construction by PG&E. PG&E also anticipates increased purchases of electricity from other utilities. This power is expected to come from a surplus generated by hydroelectric and nuclear plants in Washington State. This surplus is uncertain due to the recent cancellation of plans for two of the five Washington Public Power Supply System nuclear plants and the delay in construction of another, as well as long-term increased local demand for energy in the Pacific Northwest./1/

The City of San Francisco presently generates electricity through the Hetch Hetchy system; this power is sold to and distributed by PG&E. Two additional hydroelectric projects and four expansions are proposed by Hetch Hetchy for the Tuolumne and Clavey Rivers; these would provide additional generating capacity for San Francisco. In the next several months, Congress is expected to consider granting Wild and Scenic River status to the Tuolumne River; passage of such an act could prevent the construction of several of these hydroelectric projects.

Representative energy consumption figures for the structures on the site (when fully occupied) indicate that total annual energy use was about 840,000 kilowatt hours of electricity and about 0.8 million cubic ft. of natural gas (a total of about 9.5 billion Btu)./2/ This is reflective of the energy demands of the commercial and light industrial processes which occurred on the site as well as the energy used for ventilation, heat and light. All structures on the site are vacant and are no longer consuming energy.

NOTES - Energy

/1/ Future Generating Facilities and Changes to Existing Facilities (Form R-6), Pacific Gas and Electric Company, April 1, 1982.

/2/ Btu, British thermal unit, a standard unit for measuring heat. Technically, it is the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit (251.98 calories) at sea level. The term 'at-source' means that adjustments have been made in the calculation of the Btu energy equivalent to account for losses in energy which occur during generation and transmission of the various forms of energy.

I. GEOLOGY, SEISMICITY AND HYDROLOGY/1/

GEOLOGY

The project site is on nearly level ground, varying in elevation from -1.0 to 0.0 ft., San Francisco Datum (SFD), which corresponds to 8.6 ft. above mean sea level (MSL). The project site was originally in the shallow part of San Francisco Bay. During the mid- to late-1800s, the shoreline was progressively extended to the east by filling over the bay deposits with sand and building debris.

Test borings indicate the typical arrangement of sediments below the site is approximately 20 ft. of sandy fill, 60 ft. of soft silts and clays (Bay Mud), 45 ft. of dense sands and firm clays of the Posey Formation, and 65 ft. of old bay silts and clays of the San Antonio Formation./1/ Highly sheared and weathered shale and sandstone bedrock of the Franciscan Formation is encountered at about 190 ft. These subsurface conditions are summarized in Appendix F, p. 180. Fill and Bay Mud are not suitable as a foundation base for large structures. Most tall buildings in the vicinity are supported by piles driven into the dense sands and firm clays of the Posey Formation.

The site is in an area of major subsidence potential./2,3/ Placement of fill on Bay Mud in the late nineteenth century caused the Bay deposits to consolidate, resulting in about nine feet of subsidence in the project area./4/ After the 1906 earthquake, additional fill was placed where localized subsidence had occurred. A review of settlement measurements and consolidation tests indicate subsidence near the proposed project is essentially complete,/1/ although it could be reactivated if additional fill or load (such as would be created by new buildings) is added.

SEISMICITY

The site is located within the seismically active San Francisco Bay region. No active faults are known to exist within the City of San Francisco, but several active faults in the region would affect the site./5/ The San Andreas Fault is located 10 miles southwest of the site, the Hayward Fault, nine miles to the east, and the Calaveras Fault, 14 miles to the east of the site.

The San Andreas Fault produced major earthquakes in 1838, 1865 and 1906 (the San Francisco Earthquake), and can be expected to produce both major and minor earthquakes, with various recurrence intervals, in the future. The expected recurrence interval for an earthquake of Richter magnitude greater than 8.0 on the northern portion of the San Andreas Fault is 125 to 190 years./6,7/ The 1906 San Francisco Earthquake had a Richter magnitude of about 8.3. Earthquakes with magnitudes of 5.5 or greater are considered capable of causing structural damage.

The Hayward Fault produced major earthquakes in 1836 and 1868. This fault is capable of producing an earthquake of Richter magnitude 7.0 or greater. The expected recurrence interval for an earthquake with a Richter manitude of 6.0 to 7.0 on the Hayward Fault is 10 to 100 years./7/

The Calaveras Fault produced a minor earthquake in 1943. The approximate probability of this fault producing an earthquake of Richter magnitude 6.0 to 7.0 over a 50 year period is intermediate. The probability of a 7.0 to 7.5 magnitude earthquake is intermediate to low.

Potential seismic hazards on the site include groundshaking, liquefaction, subsidence and tsunami inundation./8/ Groundshaking is the most destructive seismic hazard in the area and is expected to be "violent" on the site for a 1906-type earthquake./2/ This magnitude of groundshaking could cause general collapse of brick and frame structures, similar to the ones presently on the site, and serious cracking in better buildings. Lateral displacement of streets, bending of rails and ground fissuring could also result./2/

The site is mapped within an area of major liquefaction potential./2/ Liquefaction usually results in ground slippage and failure when under load, causing loss of support to overlying structures on shallow foundations. Subsidence may also be seismically induced, causing uneven settling of the ground surface with resultant warping or collapse of shallow foundations.

Portions of the San Francisco waterfront could be inundated by tsunamis. The historic occurrence of such waves in San Francisco Bay has been infrequent. Studies by the US Army Corps of Engineers estimate that the maximum vertical tsunami wave height along the shore nearest the site would be 5.2 ft. above MSL in a once-in-100-years occurrence and 9.0 ft. above MSL in a once-in-500-years occurrence./9/ The building site is 7.6 ft. above MSL at its lowest point.

HYDROLOGY

Test borings for the project site indicate a groundwater level 13 ft. below the surface. The groundwater level at the site ranges from nine to 13 ft.

depending on seasonal rainfall, tidal changes and dewatering of other construction sites in the vicinity./1/

NOTES - Geology, Seismicity and Hydrology

/1/ Harding-Lawson Associates, Soil Investigation, 111 Mission Building, San Francisco, California, August 18, 1981.

/2/ URS/John A. Blume and Associates prepared for the Department of City Planning, City of San Francisco, 1974, San Francisco Seismic Safety Investigation.

/3/ Subsidence is an uneven local settlement of the ground surface due to the settling of compressible soils that can be activated by earthquake-induced ground motion or by the placement of heavy buildings.

/4/ City Planning Commission, June 14, 1979, Federal Reserve Bank of San Francisco, Final EIR, State Clearinghouse No. 79040211.

/5/ An active fault is a fault which has an historic record or other geophysical evidence of movement within approximately the last 10,000 years.

/6/ The Richter Scale is a logarithmic scale developed by Charles Richter to measure earthquake magnitude by the energy released, as opposed to earthquake intensity as determined by effects on people, structures and earth materials.

/7/ U.S. Geological Survey, 1975, Studies for Seismic Zonation of the San Francisco Bay Region, USGS Professional Paper 941-A.

/8/ Groundshaking is the transmission of earthquake vibrations through geologic materials and structures. Liquefaction is the transformation of saturated granular material, such as loose, wet sand, into a fluid-like state similar to quicksand, caused by seismic shaking. A tsunami, or seismic sea wave, is a series of long-period waves generated by some earthquakes, undersea landslides or volcanos. Upon reaching the shallow water of coastal areas, the waves greatly increase in height and may cause localized flooding. The San Andreas Fault does not cause earthquakes of the type that cause tsunamis (Garcia and Houston, 1975).

/9/ Garcia, A.W. and J.R. Houston, 1975, Type 16 Flood Insurance Study: Tsunami Predictions for Monterey and San Francisco Bays and Puget Sound, Technical Report H-75-17.

IV. ENVIRONMENTAL IMPACT

Effects of the project in the areas of public services and utilities, biology, hydrology and hazards and safety issues were determined to be insignificant after review of the Initial Study, and will not be discussed in the EIR. The Initial Study is reproduced in Appendix H, p. 182. Some of the impacts presented herein are not physical environmental effects as defined by the California Environmental Quality Act. They are included in the EIR for informational purposes only.

A. ZONING AND LAND USE

The proposed project would contain 352,900 gross sq. ft. on a site where 352,916 gross sq. ft. would be allowed by the prescribed 14:1 Floor Area Ratio (FAR). The project would be about 370 ft. tall (399 ft. to the top of the mechanical penthouse); the allowable height on the site is 400 ft. The building's width and length dimensions above 150 ft. would be 155 ft. by 127.5 ft., less than the maximum allowable length of 175 ft. The diagonal dimension above 150 ft. would be about 184 ft., 16 ft. less than the maximum 200 ft. permitted by the bulk provisions of Section 270 of the City Planning Code. The proposed parking area of 29,350 sq. ft. would be less than the 7% of the total floor area permitted by Section 204.5(c) of the Planning Code as an accessory use. The proposed office uses on the site would be compatible with existing office buildings in the vicinity and with those buildings under construction or undergoing environmental review (see Appendix A, Table A-2, p. 137).

The proposed project would represent a continuation of the current trend of new office construction in the blocks south of Market St. between Market and Howard Sts.

The proposed project is compatible with adjacent land uses which include office development and office support services. It is in general conformity

with the Commerce and Industry Element of the City's Comprehensive Plan and would respond to policies supporting several of the objectives of the Commerce and Industry Element. It would respond to Objective 1, which is to maintain and enhance a favorable business climate in the City, by providing net benefits and minimizing undesirable consequences (Policy 1). The project would also respond to Objective 2 by attracting new commercial activity to maintain the economic base of the City (Policy 1). The project would respond to Objective 3, in providing jobs for San Francisco residents. It is not known at this time the extent to which the project would provide "employment improvement opportunities for unskilled and semi-skilled workers" (Policy 1). It would respond to Objective 4, by promoting and attracting economic activities of benefit to the City (Policy 2).

The proposed project would comply with Objective 6 of the Commerce and Industry Element of the Comprehensive Plan to "maintain and improve San Francisco's position as a prime location for financial, administrative, corporate, and professional activity." The project would be consistent with Policy 1 of this Objective, which is to "encourage continued growth of downtown office activity . . ." It would respond to Policies 2 and 4 of Objective 6, which are to "maintain a compact downtown core" and to provide "amenities for those who will live, work, and use the Downtown." The project is designed to be compatible with the design and character of San Francisco (Policy 3).

The proposed use of the project site for an office building would comply with the description of the C-3-O District in Section 210.3 of the City Planning Code as "playing a leading national role in finance, corporate headquarters and service industries, and serving as an employment center for the region."

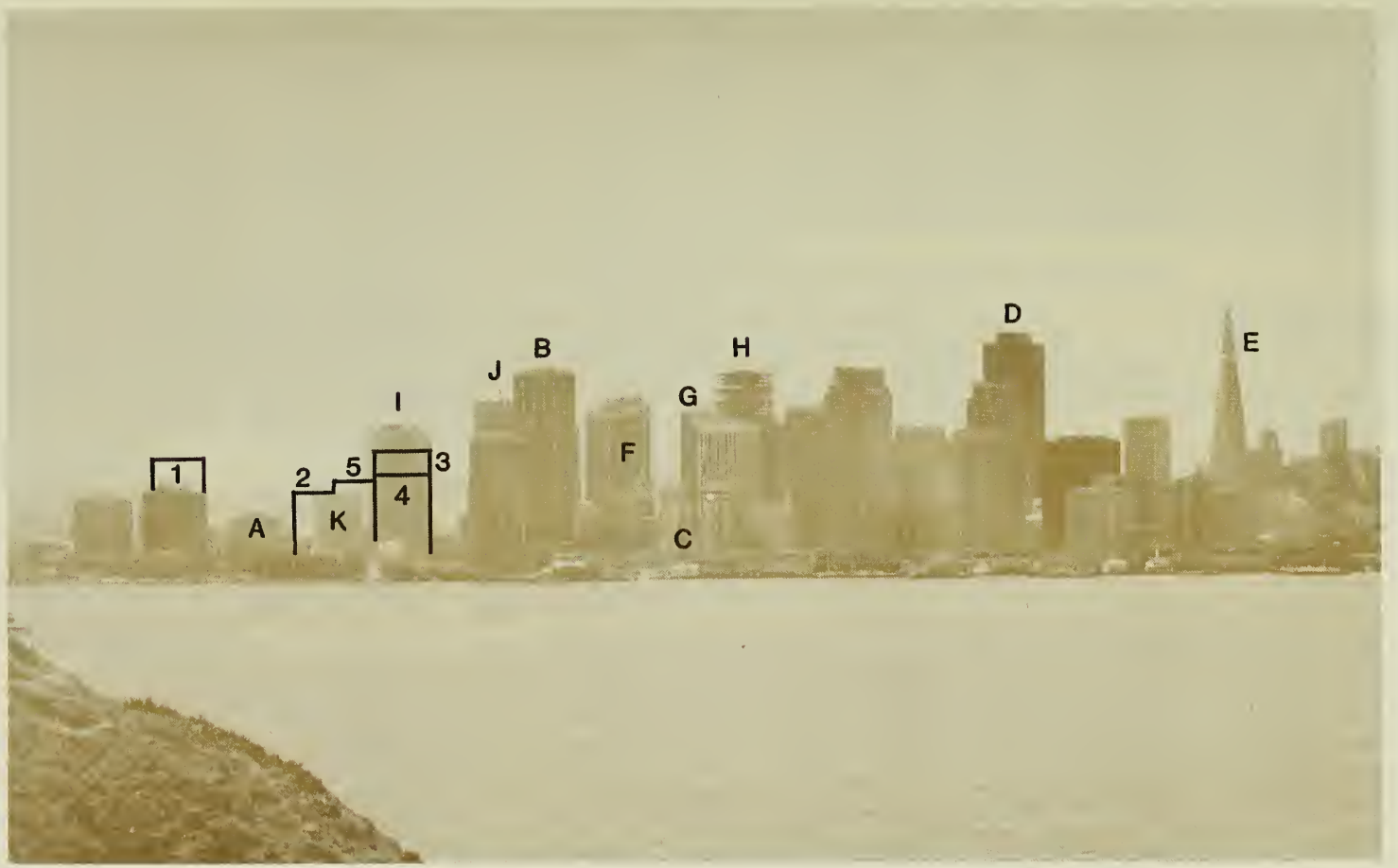
The project would comply with the use, floor area, height and bulk requirements of the City Planning Code.

B. URBAN DESIGN FACTORS

The 27-story project would be more visible than the buildings now on the site. Rising to a height of about 370 ft. (399 ft. to the top of the mechanical penthouse), it would be visible in long-range views on the skyline as a part of the Financial District composed of office buildings existing, under construction, and proposed. The top of the building would be visible in views from the southeast and east, such as from the Bay Bridge or Yerba Buena Island (see Figure 15, p. 49), above the 20-story building under construction at 100 Spear St. In the long-range view from Potrero Hill, it would be blocked from view by the Pacific Gateway Building. From the southwest in near-range views, it would be visible above the 22-story building proposed at 135 Main St. (see Figure 16, p. 50). From the west in long-range views, such as from Twin Peaks, the 33-story Pacific Gateway building near completion and the 43-story PG&E office tower across the intersection of Mission and Main Sts. from the site would obscure the project building. The view of the building from the west is shown in Figure 17, p. 51.

The project would not obstruct any scenic views or vistas of the Bay now available to the public. Views across the site to the Bay from the Main St. off-ramp or from Rincon Hill are blocked by existing buildings, including One Market Plaza and the 150 Spear St. building. The project would create minor view blockages to the east or southeast which would otherwise be available across the tops of these buildings. Buildings immediately adjacent to the project on the project block would not have windows facing the project so no view blockage would result.

A covered pedestrian walkway at street level along the project's eastern edge would lead to a mid-block passage way connecting Mission and Howard Sts. (see Figure 18, p. 52 for a representation of the Mission St. frontage). Trees would line the east wall of the walkway, affording a separating strip of landscape between the project and the 100 Spear St. Building. (The view of the project from Main St. near Market St. is shown in Figure 19, p. 53.) The project would be light in color and have clear glass windows on all floors which complies with policies of the Urban Design Element of the Comprehensive Plan.



⌂ PROJECT (#3)

STRUCTURES PROPOSED OR UNDER CONSTRUCTION

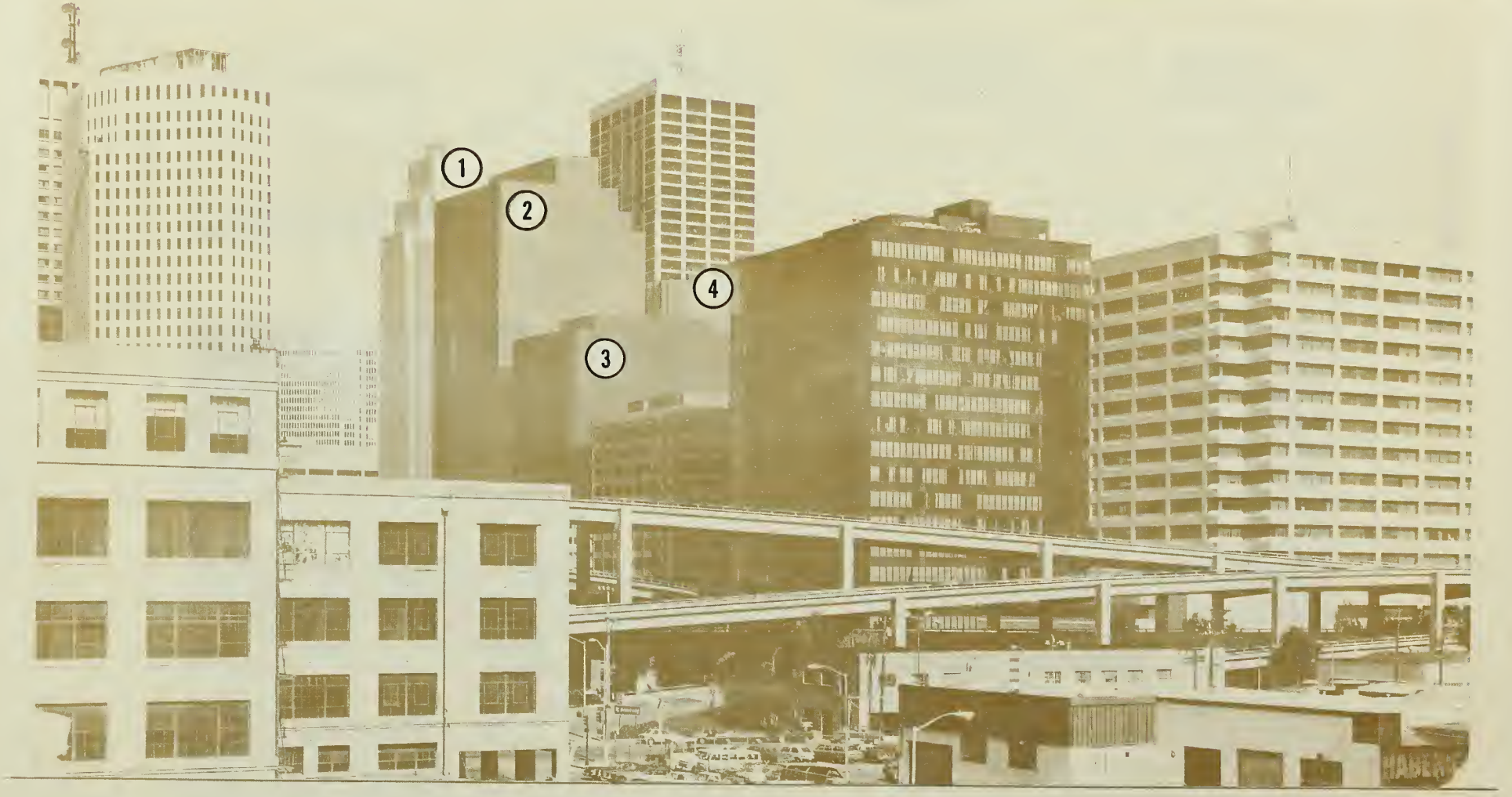
1 315 Howard
2 160 Spear
3 PROPOSED PROJECT
4 100 Spear
5 135 Main

EXISTING STRUCTURES

A Howard-Main Bldg.
B 1 Market Plaza
C Ferry Bldg.
D Bank of America
E Transamerica Bldg.
F 333 Market St.
G 444 Market St.
H 101 California St.
I Pacific Gateway
J 5 Fremont St.
K 150 Spear

SOURCE: Environmental Science Associates, Inc.

FIGURE 15:
VIEW OF THE PROJECT FROM
YERBA BUENA ISLAND



(1) PROJECT

(2) 135 Main St. (P)

(3) 160 Spear St. (UC)

(4) 150 Spear St. (UC)

FIGURE 16: VIEW OF THE PROJECT FROM RINCON HILL LOOKING NORTH

SOURCE: Environmental Science Associates, Inc.

SOURCE: Environmental Science Associates, Inc.

FIGURE 17:
PHOTOMONTAGE OF THE PROJECT LOOKING EAST ON MISSION STREET

SOURCE: Environmental Science Associates, Inc.

FIGURE 18:
PHOTOMONTAGE OF THE PROJECT – VIEW OF MISSION STREET FRONTAGE

FIGURE 19:
PHOTOMONTAGE OF THE PROJECT -
VIEW OF MAIN STREET FRONTAGE

SOURCE: Environmental Science Associates, Inc.

The plan dimensions of the office tower would be similar to the bulk of new development on the block and vicinity, which has generally replaced narrow, small buildings with larger, taller buildings. The 100 Spear St. building will be 92 ft. by 137.5 ft. The 135 Main St. project will be 137.5 ft. by 109 ft. The 160 Spear St. project will be 137.5 ft. by 137.5 ft. The 150 Spear St. building southeast of the project has a depth of 127.5 ft. and a similar width. The four-story building at 120 Spear St. is 46 ft. wide and 137.5 ft. deep.

The Urban Design Element of the Comprehensive Plan of San Francisco describes City objectives and policies pertaining to urban design. Table 4 summarizes the relationship between these policies and the design of the proposed project.

TABLE 4: RELATIONSHIP OF THE PROJECT TO APPLICABLE URBAN DESIGN POLICIES OF THE SAN FRANCISCO COMPREHENSIVE PLAN*

APPLICABLE URBAN DESIGN POLICIES	RELATIONSHIP OF THE PROJECT TO APPLICABLE POLICIES
A. Policies for City Pattern	
1. Policy 1: "Recognize and protect major views in the city, with particular attention to those of open space and water." (page 10)	The 27-story project would become a part of the group of buildings in the Financial District, forming a transition from lower buildings (18, 19, 20 and 22 stories) to the south and east, and higher buildings (33, 40 and 44 stories) to the west and north. Bay views from the upper levels of the Pacific Gateway building would be partially blocked by the project. The view blockage would be in addition to that already resulting from the 100 Spear St. building.
2. Policy 3: "Recognize that buildings, when seen together, produce a total effect that characterizes the city and its districts." (page 10)	The 27-story office tower would be the tallest building on the block, forming a skyline transition from 18, 19 and 22 stories (150 Spear 160 Spear, 135 Main) to higher buildings of 33 stories (Pacific Gateway), and 40 stories (Spear St. Tower, One Market Plaza). These higher buildings identify the downtown office district.

TABLE 4: Continued

APPLICABLE URBAN DESIGN POLICIES	RELATIONSHIP OF THE PROJECT TO APPLICABLE POLICIES
3. Policy 6: "Make centers of activity more prominent through design of street features and by other means." (page 12)	The ground floor, plaza, pedestrian walkway, with tree border, and the height of the office tower would emphasize the location and would become a part of the visual connection to the downtown highrise development north of the site.
4. Policy 8: "Increase the visibility of major destination areas and other points for orientation." (page 13)	The project would be highly visible to passengers of vehicles entering the City via the Main St. freeway off-ramp southwest of the site.
B. Policies for Major New Development	
5. Policy 5: "Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development." (page 36)	The project complies with the concept of transition between higher buildings inland and lower buildings at the Bay shore. As noted in No. 1, the project would be a visual step between higher and lower buildings.
6. Policy 6: "Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction." (page 37)	The horizontal dimensions of the project would be similar to other new construction on the block.

* Department of City Planning, 1971, Urban Design Element of the Comprehensive Plan, 1971. Page references are shown in parentheses.

SUNLIGHT AND SHADOW PATTERNS

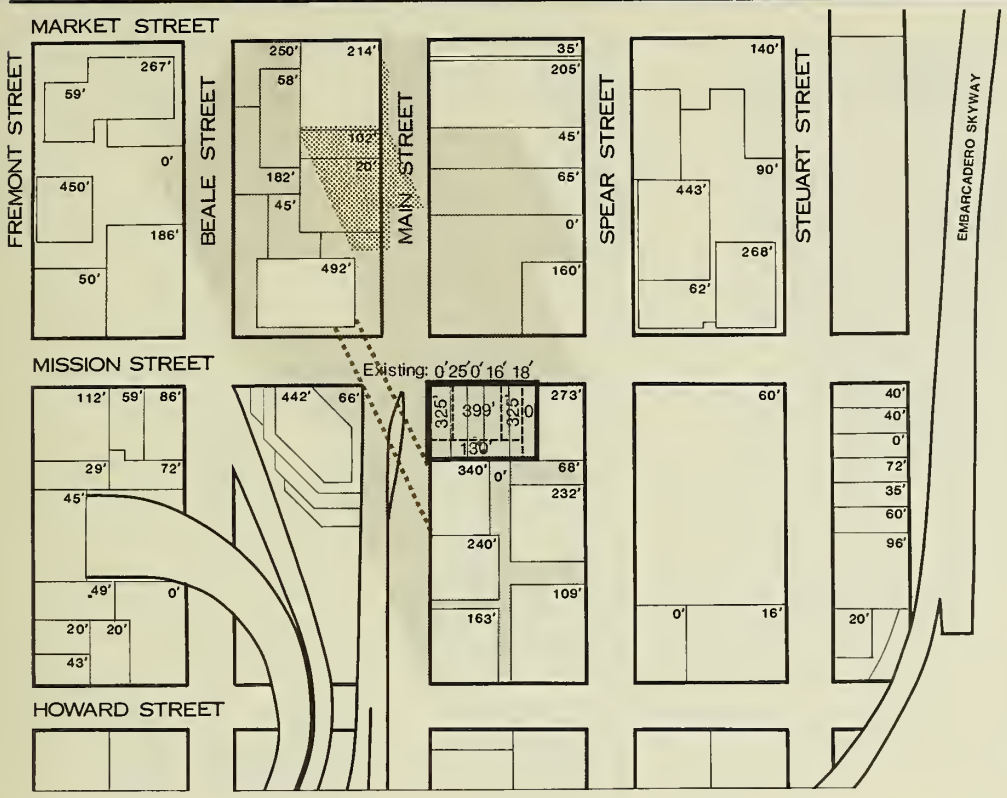
Most existing shadow patterns within and surrounding the project block are produced by the PG&E and Pacific Gateway buildings on the northwest and southwest corners of Mission and Main Sts., the 100 Mission building at Mission and Spear Sts., and on the project block, the Borel building at Spear and Howard Sts., the 150 Spear St. office building and the Kemper building.

At present, portions of Main St. and Mission St. are shaded from early morning to mid-morning during all seasons of the year. From mid-morning to mid-afternoon small portions of Mission St. and greater portions of Spear St. are shaded at all seasons of the year. From mid-afternoon to evening, portions of Spear St. are shaded at all seasons of the year, and the street is almost completely shaded in spring, fall and winter months. Portions of Steuart St. are shaded from mid-afternoon to evening during the fall, winter and spring months (see Figures 20-24, pp. 57-61).

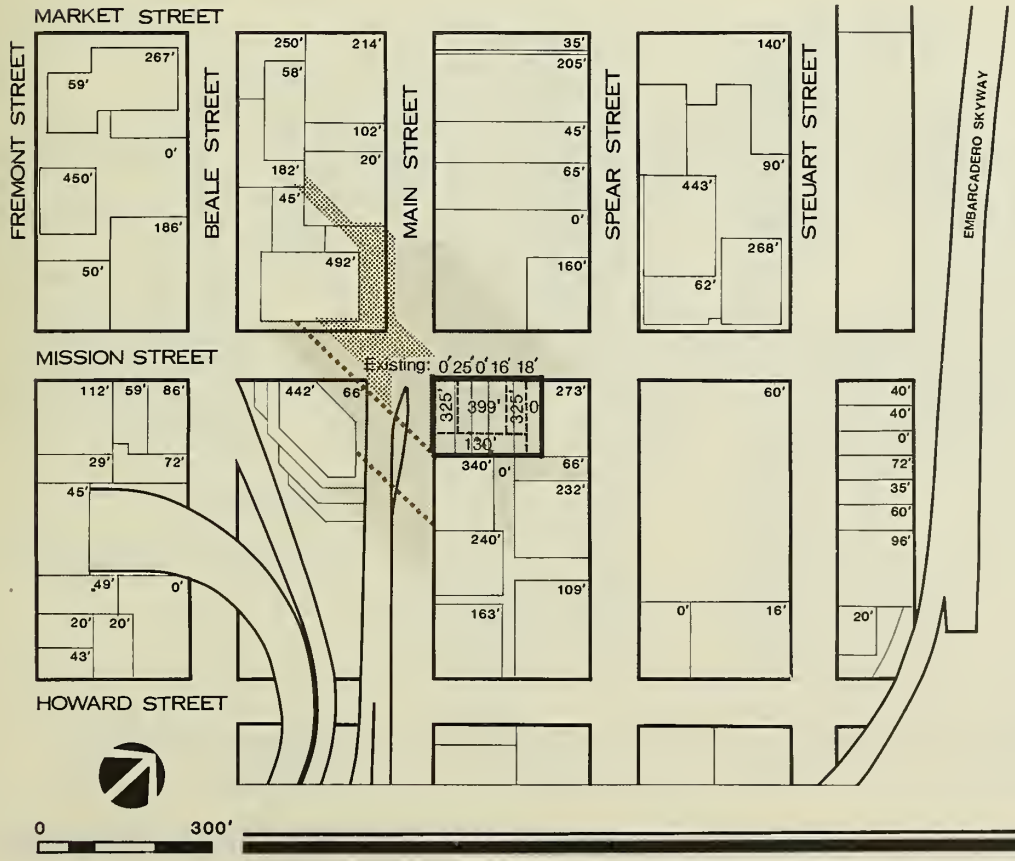
Existing shadows, project shadows and shadows from developments under construction on the block and in the vicinity are shown in Figures 20-24. The shadow diagrams depict shadows only from buildings in the shadow path or track of the project. Shadows are not diagrammed for all buildings shown on the map. Most shadow patterns of the project would coincide with those cast by existing and new buildings under construction or proposed in the area, primarily the 100 Spear St. office building, the 160 Spear St. office building, the Pacific Gateway building, and the 135 Main St. office building. The open space between the project tower and the 100 Spear St. tower would be shaded most of the day throughout the year by surrounding buildings and the project itself.

From early to mid-morning, shadows from cumulative development would cover Main St. along most of its length between Howard and Market Sts. in spring, summer and fall months (see Figure 20). Mission St. would be shaded during these hours at all seasons of the year. From spring to autumn, the shadow cast by the project during this time would shade the PG&E driveway and part of the sidewalk around the PG&E Building.

During the mid-morning to mid-afternoon period year-round, Mission St. in the project vicinity would be partially to fully shaded by the project, Pacific Gateway and the 100 Spear St. (see Figures 21 and 22). Spear St. would be partially to fully shaded during all seasons of the year from mid-afternoon to late afternoon by cumulative development (see Figures 22-24); no new shadows would be cast on Spear St. by the project.



March/September, 8A.M.



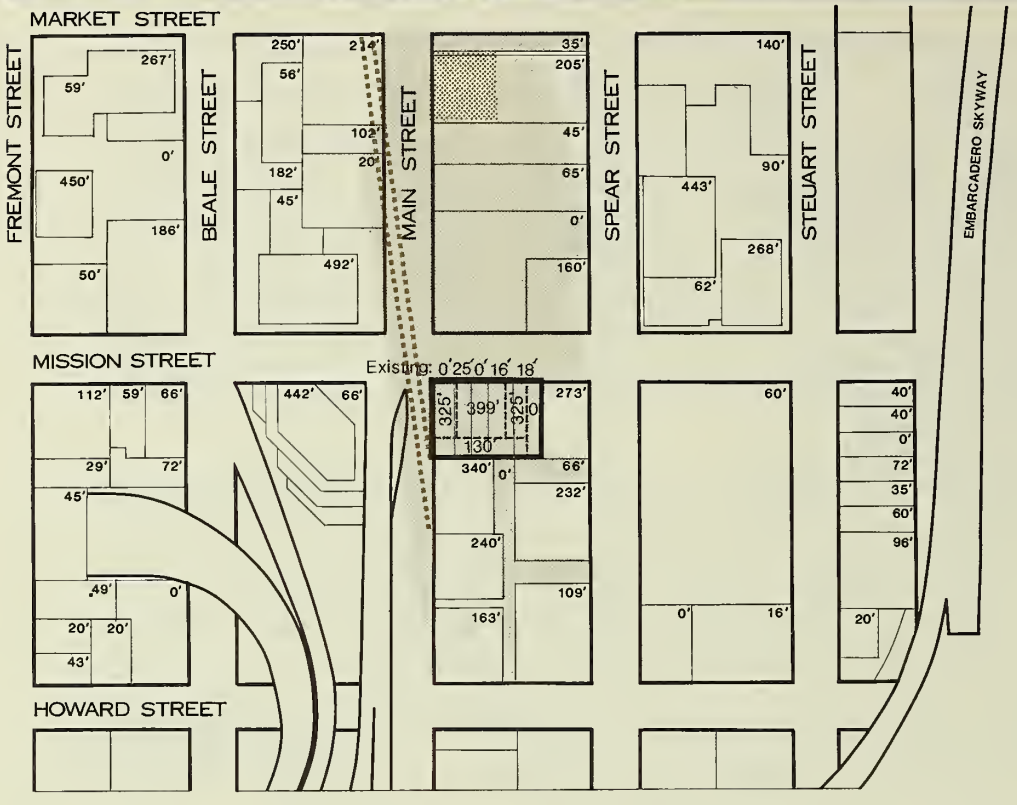
LEGEND

- EXISTING SHADOW
- NEW PROJECT SHADOW
- PROJECT LOCATION
  NUMBERS ON SITE REPRESENT VARIOUS HEIGHTS OF PROJECT
- ..... PROPOSED PROJECT SHADOW

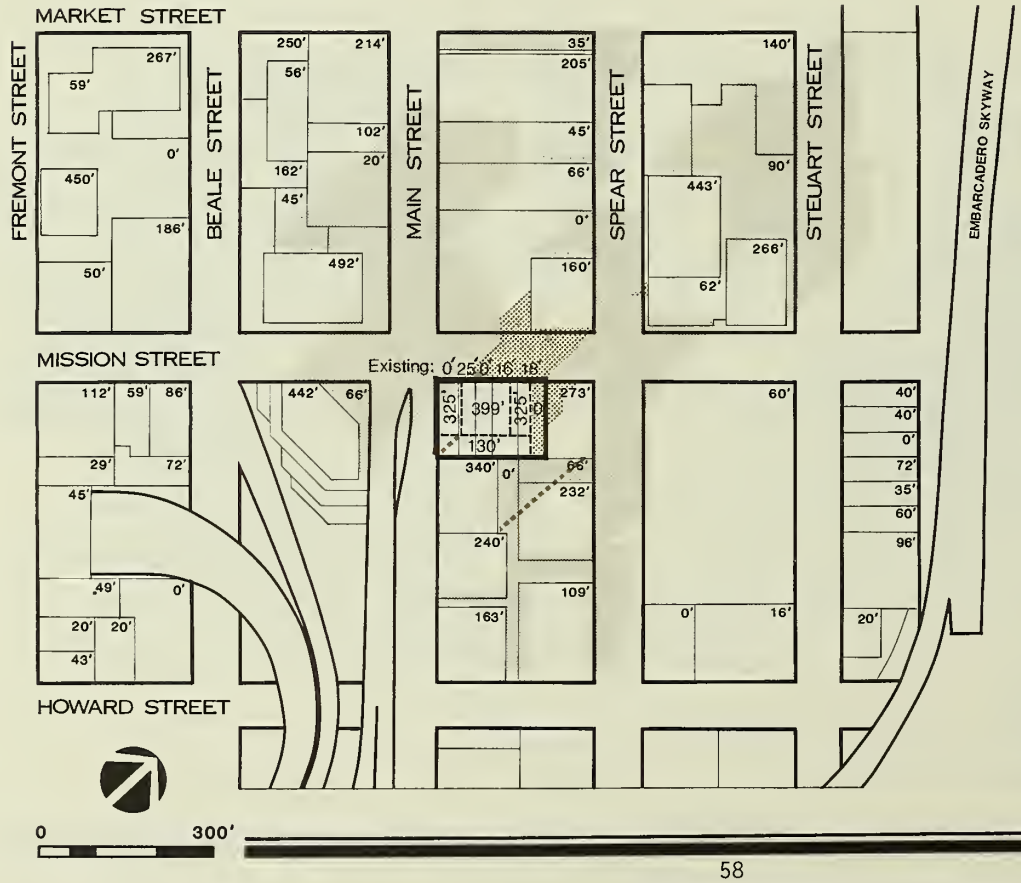
FIGURE 20:

SHADOW PATTERNS -

June, 8A.M.



December, 8A.M.



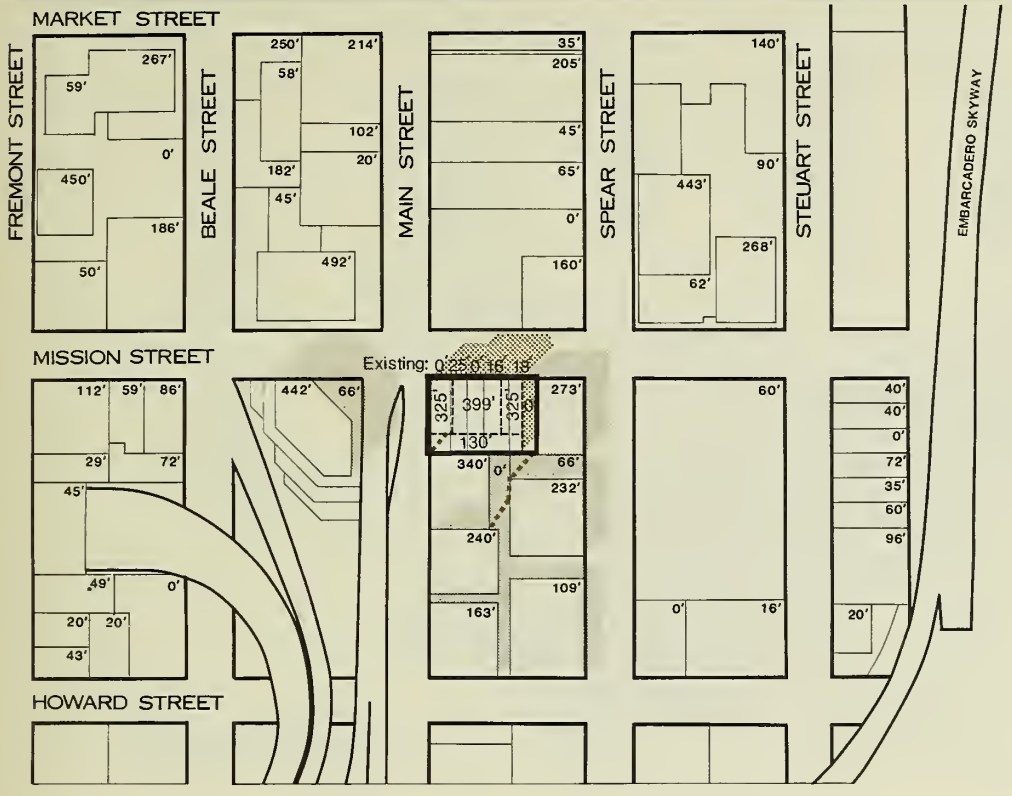
LEGEND

- EXISTING SHADOW
- NEW PROJECT SHADO
- PROJECT LOCATION
  NUMBERS ON SITE REPRESENT VARIOUS HEIGHTS OF PROJECT
- ..... PROPOSED PROJECT SHADOW

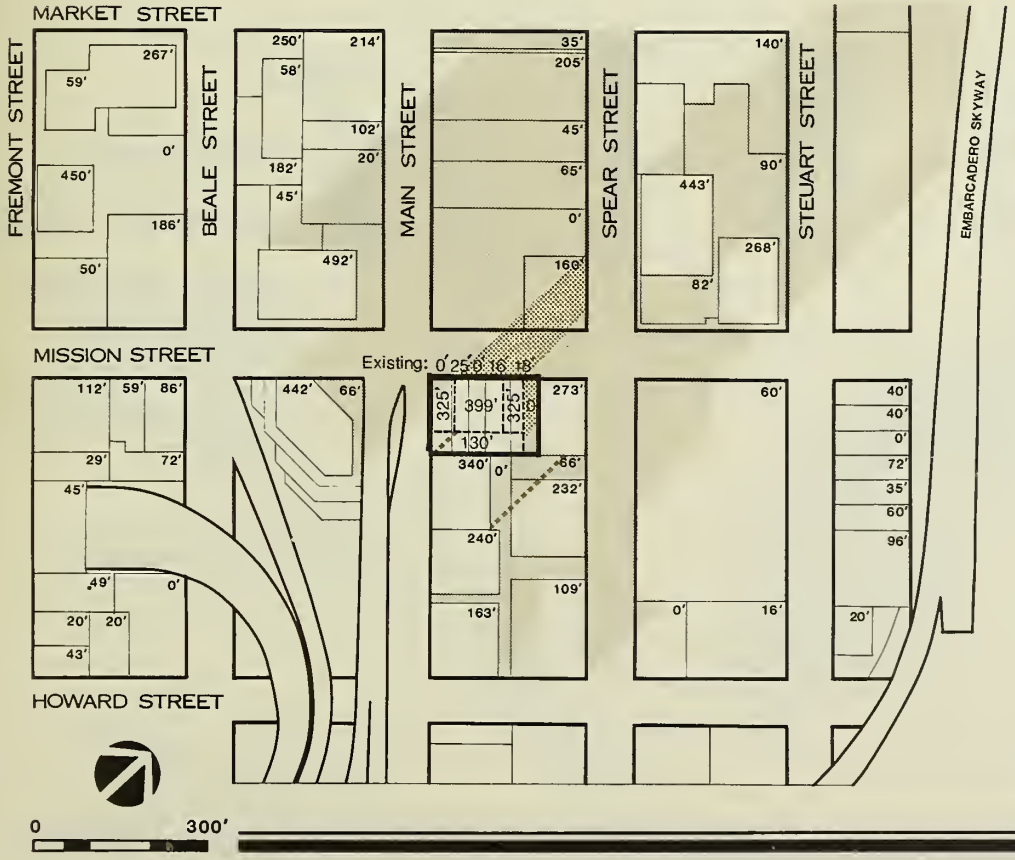
FIGURE 21:

SHADOW PATTERNS -

March/September, Noon



June, Noon



December, Noon

0 300'

LEGEND

EXISTING SHADOW

NEW PROJECT SHADOW

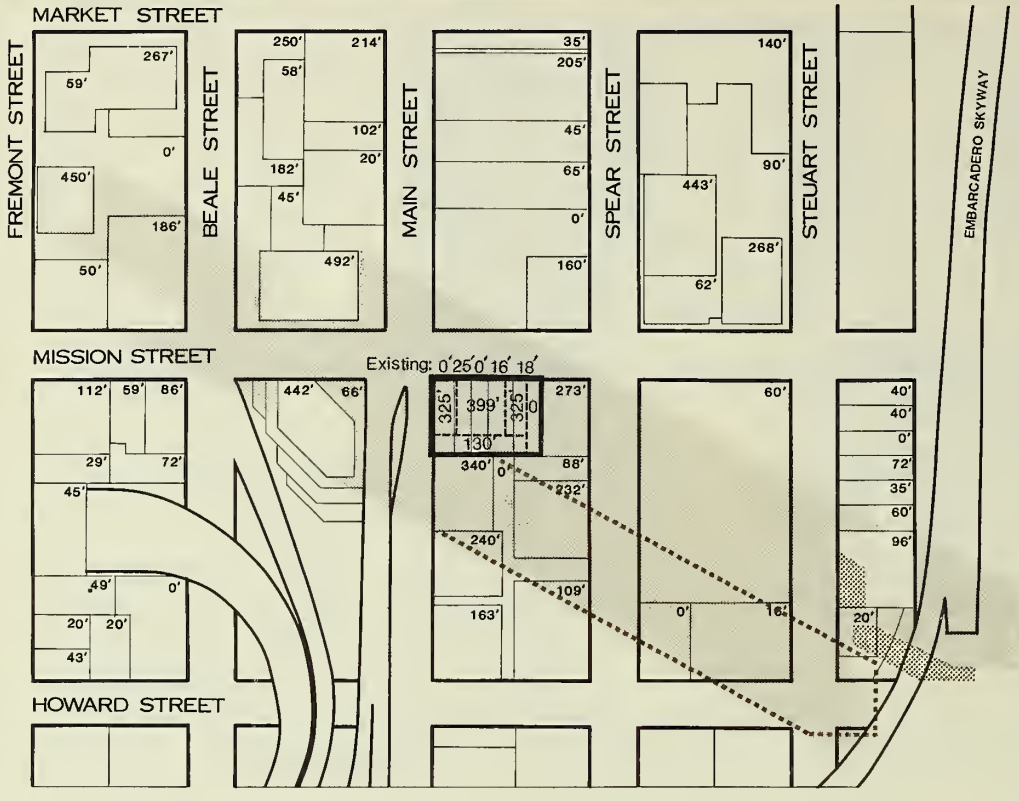
PROJECT LOCATION

NUMBERS ON SITE REPRESENT VARIOUS HEIGHTS OF PROJECT

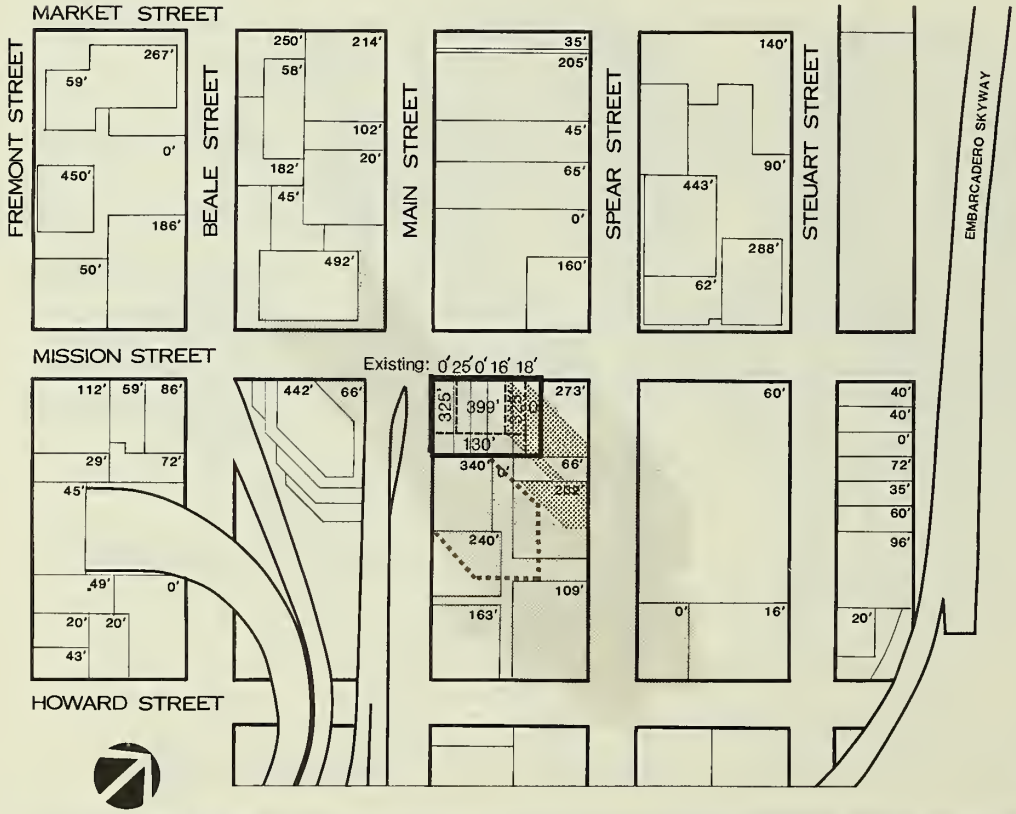
..... PROPOSED PROJECT SHADOW

FIGURE 22:

SHADOW PATTERNS -



March/September, 4P.M.



LEGEND

EXISTING SHADOW

NEW PROJECT SHADOW

PROJECT LOCATION

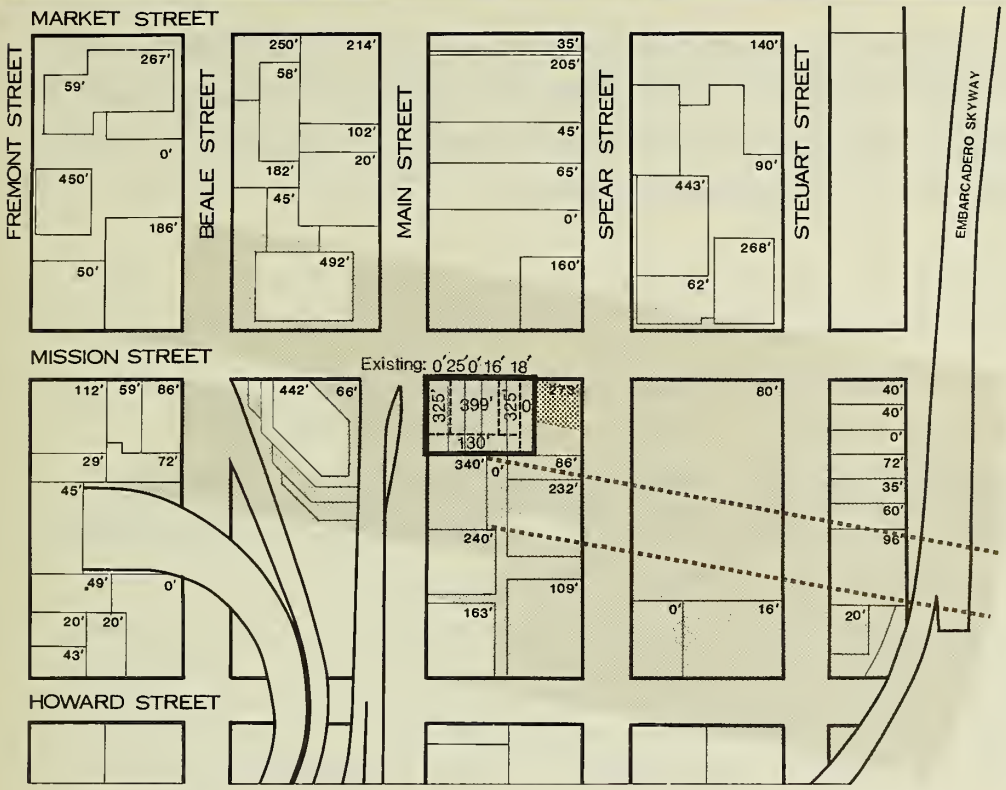
NUMBERS ON SITE REPRESENT VARIOUS HEIGHTS OF PROJECT

..... PROPOSED PROJECT SHADOW

FIGURE 23:

SHADOW PATTERNS -

June, 4P.M.



December, 4P.M.

LEGEND

EXISTING SHADOW

NEW PROJECT SHADOW

PROJECT LOCATION

NUMBERS ON SITE REPRESENT VARIOUS HEIGHTS OF PROJECT

PROPOSED PROJECT SHADOW

FIGURE 24:

SHADOW PATTERNS - DECEMBER 4PM

0 300'

From mid-afternoon on, the project would shade the open space east of the project tower (see Figures 23 and 24). The mid-block pedestrian walkway would receive little sunlight, being shaded by the surrounding buildings most of the time and partially shaded at all times of the year.

WIND

Wind tunnel studies were conducted on a previous design for the site (see Alternative 4, Figure 30, p. 125)./1/ When the project was redesigned in 1982, the new design was analyzed with respect to the wind tunnel study./2/ The new design is about 30 ft. taller (to the top of the mechanical penthouse) and about 18 ft. wider (Mission St. frontage) than the previous design. The following discussion integrates both analyses (see Appendix B, p. 140, for the text of both studies).

For northwest winds, the project in combination with other developments under construction in the site vicinity - Pacific Gateway, 100 Spear St., the Federal Reserve, 160 Spear St. and the 135 Main St. building - would cause the following changes in the wind environment near the site: 1) a 65% increase in wind speeds, from the low range to the moderately-low range along Mission St. between Spear and Steuart Sts.; 2) a reduction in wind speeds on Mission St. between Main and Beale Sts. of about 10%; 3) an increase in gustiness on the east side of Main St. between Market and Mission Sts.; 4) an overall (average) reduction (5%) in gustiness and in the ranges of wind speeds would occur; and 5) the midblock (at the 160 Spear site) west-to-east wind flows in the project block would be eliminated.

For west winds the project and cumulative development in the vicinity would cause the following changes in the surface wind regime: 1) the ranges of wind speeds and the flow unsteadiness at the intersection of Beale and Mission Sts., and on Mission St. midway between Spear and Steuarts Sts. would remain unchanged; 2) the mid-block west-to-east flow across the project block would be eliminated; 3) the winds on Mission St. between Beale and Main Sts. would be reduced; 4) the strong gusting wind at the corner of Spear and Howard Sts. would be reduced approximately 50%; and 5) a flow reversal (from north-to-south to south-to-north) would occur along Main St. in front of the project,

with a doubling of speed to the moderate range. This would be a wind speed of about 4 mph when the freestream velocity is 13 mph, a speed which is exceeded 29% of the time or a windspeed of 7.5 mph when the freestream velocity is 25 mph which is exceeded 7% of the time (see Note /3/, p. 26 of Setting section).

For both northwest and west winds, wind speeds in the ground level plaza and walkway of the tower would be in the low to low moderate ranges.

NOTES - Urban Design Factors

/1/ A study of localized mean wind speeds, turbulence and directions at and near the project site for freestream winds from the west and northwest was conducted using a scale model of the site and vicinity in an environmental wind tunnel. See Appendix B, p. 140, for the text of the wind-tunnel study.

Wind tunnel studies consisted of two parts: flow visualization and wind speed measurements. The motion of a continuous stream of smoke injected at various locations was used to identify flow direction and strategic locations for wind speed measurements. Mean wind speed and turbulence at strategic points were determined from a statistical treatment of a series of discrete speed measurements.

/2/ Donald Ballanti, Certified Meteorologist, September 6, 1982, Letter Report (see Appendix B, p. 143, for the text of the report).

C. HISTORIC AND CULTURAL RESOURCES

The "1" (DCP) and "C" (Heritage) rated building at 199 Mission St. was demolished in late 1982 under emergency exemption from environmental review. No other buildings on the site are rated.

Excavation for the project's partial basement level would extend to a depth of 16-20 ft. on the southwest corner of the site (see Figure 4, p. 10); fill extends to a depth of about 20 ft. If the Trescott is in fact buried beneath the site, the possibility exists that it or other maritime artifacts could be uncovered during excavation. It is possible that the ship could be located at a point where piles would be driven; if so, piles could be driven through the ship. Predrilling would occur for piles and would indicate timber if encountered, at which point precautionary measures would be taken (see the mitigation measure proposed as part of the project on p. 109).

D. EMPLOYMENT, HOUSING AND FISCAL FACTORS

Direct Project-Related Employment

Approximately 1,390 permanent full-time jobs would be provided by the project. Although no tenants are secured at this time, prospective tenants are anticipated to be primarily institutional users with a need for large floor sizes. Because specific tenants are unknown at this time, the projected total number of employees was derived by assuming an average number of sq. ft. per employee, by employment type (see Table 5).

TABLE 5: PROJECTED PERMANENT EMPLOYMENT AT THE PROJECT SITE

Employment Type	Building Space (Gross Sq. Ft.)	Space Per Employee (Sq. Ft.)	Projected Number of Employees*
Office	342,770	250 **	1,370
Building Staff	352,900	30,000 ***	10
Security, Engineers Parking Attendants, etc.		NA	10
TOTAL EMPLOYMENT			1,390

* Projections are rounded to the nearest five employees.
** San Francisco Department of City Planning, "Office Housing Production Program - Interim Guidelines," January 1982.
*** Highrise buildings generally employ one janitor per 30,000 gross sq. ft. (Roger Dillon, Secretary-Treasurer, Building Services Employees Union, Local 87, telephone communication, April 17, 1980).

SOURCE: Environmental Science Associates, Inc.

Indirect (Secondary) Employment

Secondary employment and income would result from permanent project employment; through the multiplier effect, each employed person would generate additional employment through expenditure for goods and services. Assuming that the new jobs accommodated by the project would be primarily in finance, insurance, and real estate (FIRE), about 1,640 additional jobs in other sectors of the Bay Area economy would result from the growth of FIRE

businesses./1/ The total number of Bay Area jobs that would be supported by growth in downtown employment due to the project would be about 3,030 (1,390 project jobs plus 1,640 jobs induced by the multiplier effect)./1/ Project construction would require about 230 person-years, about 115 construction laborers over the two-year construction period. About 180 additional person-years of employment would be generated in the Bay Area as a result of the multiplier effect of project construction./1/

HOUSING

As indicated in the previous subsection, the project would result in a net increase in on-site employment of about 1,390 full-time jobs. To the extent that the project would attract out-of-area employees and contribute to the formation of additional households by existing area residents, it would also contribute to increased local housing demand and a jobs/housing imbalance.

The Report of the Citizen's Housing Task Force (San Francisco, July 29, 1981) and the Housing Needs Report (Association of Bay Area Governments, December, 1981) reflect the fact that new household formation in the Bay Area will result not only from economic development, but also from children reaching maturity, immigration and other demographic factors independent of office development in San Francisco. Thus, while office employment growth plays a role, the housing problems of City residents are not solely or mainly due to office growth.

If the assumptions used in the Office/Housing Production Program formula for calculating housing demand from downtown office projects are applied (that 40% of new office workers would seek housing in San Francisco and that there are 1.8 office workers per household), the project would result in 548 new San Francisco residents from office employment; required housing would be 305 housing units (based on 342,770 gross sq. ft. of office space). This formula represents the basis for the City Planning Commission's policy for housing to offset demand created by office developments. Another formula, documented in the 101 Montgomery Street, Final EIR which was certified by the City Planning Commission, projects that between 15% to 30% of new employees would be expected to seek housing in San Francisco and each household would be occupied

by 1.4 workers. Based on these assumptions, the project could result in 147 to 294 new households in San Francisco. The approximate number of new households to be generated outside of San Francisco as a direct result of the project is estimated to be about 190 on the Peninsula, 315 in the East Bay, and 125 in the North Bay (see Appendix C, Table C-1, p. 154). This estimated effect would be less if some of the newly created jobs were filled by existing unemployed Bay Area residents or by people moving from non-office employment to office-related jobs (assuming a concurrent reduction in non-office employment). In December 1982, in San Francisco, the unemployment rate was 8.8%./2/

Housing Affordability

In order to determine precisely the housing affordable to households created by a specific increase in San Francisco office space, the following factors must be considered: 1) the number of new households generated as a result of the increase in office space; 2) the location preference of these households; and 3) the ability of these households to pay for housing.

Precise quantification of project impacts on the housing market is not possible based on available published information.

A study of the "Feasibility of Performing a Housing Affordability Analysis" by Questor Associates (June 15, 1982) concludes that household income of project employees, distribution of housing demand, and magnitude of new demand can only be precisely determined by surveying occupants of buildings comparable to a particular office project./4/ Such a survey would be complex and may not reveal all of the data that would be necessary for a complete analysis.

First, it is not possible to simply survey prospective tenants because not all of the employment attributable to the project would be located within the project. As new office space would be primarily occupied by the expansion of existing San Francisco businesses that would relocate, most workers on the site would be already employed in the City./3/ Housing demand attributable to the project must be projected based on net new employment generated by the project that would be distributed primarily throughout downtown San Francisco.

New employment growth due to the project would occur as new jobs were created in older buildings which would be vacated by workers (or firms) moving to the project. As tenants for the project are not known, it is impossible to predict which buildings would be vacated for the project (and which buildings would be then vacated to fill the former level of vacated space, etc.) Even if tenants were known, the same difficulty of determining all the iterations of tenant movement would apply. For the above reasons, it is not possible to precisely quantify new employees and their incomes due to the project.

The projected regional distribution of project employees is contained in Appendix C, Table C-1, p. 154. Where an employee will live is the result of individual decision-making. Such decisions are a function of location preference and housing economics of individual households. Preference information is complex, involving many factors such as number of bedrooms, type of neighborhood, family composition, and commute distance to work. Information concerning housing preferences may be obtainable through surveys of new office workers if these individuals could be identified.

Assuming that the number of new employees and their preferences for housing were known, the most critical variable affecting the housing affordability analysis would be a new household's ability to pay for housing. The salary of new workers alone is insufficient to determine housing affordability; for example, the total income of all members of the new worker's household must be known. A variety of published sources give salaries for various occupational categories, but no comprehensive data regarding the distribution of household income among office workers (or any other group of workers) exists. City-wide household income estimates based on the 1980 Census will be available 1983, but this data source will not reflect household income of downtown office workers.

Parameters that determine housing affordability for an individual household include the ratio of housing expenses to income and the down payment for home ownership. The ratio of housing expenses to income, according to the "Office Housing Production Program (OHPP) Interim Guidelines", January 1982, are 30% of household income for rental expenses and 38% of household income for home ownership expenses. The down payment for home ownership may be assumed to be

between 10% and 20% of purchase cost; however, a household's ability to afford a down payment would depend on household assets and liabilities, and would vary widely for different households. Assumptions regarding mortgage interest rates must also be made. Considerng the volatility of interest rates in recent years, an affordability analysis based on current market interest rates might not be relevant when the project is completed and occupied.

In the absence of an employee-specific survey, a limited analysis of housing affordability, based on available data, appears in Appendix C, Table C-2, p. 156. Data in the table rely upon published sources of office worker incomes (not household income), and published sources of housing prices (not necessarily existing vacant units). Assumptions are made regarding ratio of housing expenses to income, mortgage interest rates, and down payments. Analysis based on these data and assumptions indicate that most project employees would not be able to afford ownership housing in San Francisco, although some employees, depending on the number of workers per household, would be able to do so. Most project employees, except the lowest-paid clerical employees desiring to live alone, would be able to afford rental housing in San Francisco.

FISCAL

Revenues

The proposed project would generate about $1.03 million in total property, payroll, sales, gross receipts and utility tax revenues to the City General Fund, which would represent a net increase of about $1.01 million over revenues generated to the General Fund from the existing site.

Assessed Valuation and Property Taxes

Based on replacement costs, the project would have a fair market value of about $56 million (in 1983 dollars). Based on the property's full assessed (or market) value, the project would generate a total of about $560,000 in non-bond property tax revenues. Estimated non-bond property tax revenue of about $489,500 (from the $1 per hundred dollars of assessed value) would

accrue to the City's General Fund. This amount would be a net increase of about $468,100 over existing ($21,400) non-bond property tax revenues to the City.

The building would also generate property tax revenues to be used to retire bond debts. The tax rate at which these revenues would be generated in 1985 would depend on the amount of principal and interest payments due in that year and the total assessed value of property in San Francisco. The rate in 1982-83 is $0.17 per hundred dollars of assessed value. If that were still the rate in 1985, when the building would be occupied, bond payment revenues from the building would be about $95,200, a net increase of about $91,000 above existing 1982-83 bond retirement revenues of about $4,700. The complete distribution of bond and non-bond property tax revenues that would be generated by the proposed project is shown below in Table 6.

TABLE 6: DISTRIBUTION OF PROPERTY TAX REVENUES FROM PROJECT SITE IN 1985 (1983 dollars)

Agency	Ad Valorem Tax Rate*	Percent*	Revenues**
City and County of San Francisco			
General Fund	$0.875	74.7%	$489,543
Open Space Acquisition	0.025	2.1	14,000
Bond Repayment	0.099	8.4	55,336
S.F. Community College District	0.014	1.2	8,089
S.F. Unified School District			
General Purpose	0.078	6.7	43,658
Debt Service	0.008	0.7	4,696
Bay Area Air Quality Management District	0.002	0.2	1,168
BART			
General Fund	0.006	0.5	3,542
Debt Service	0.063	5.4	35,168
TOTAL	$1.17	100.0	$655,200

* Rounded
** Based on the 1982-83 composite tax rate of $1.17 per $100 of assessed valuation and an assessed valuation of $56 million.

SOURCE: San Francisco Controller's Office, calculations by Environmental Science Associates, Inc.

Payroll/Gross Receipts Tax

Tenants of the proposed building would pay either the payroll or gross receipts tax, whichever is greater./5/ Assuming that all tenants would pay a payroll tax, a 1982 average wage of about $25,000 for downtown office workers/6/ and the current approval payroll tax rate of 1.5%, payroll tax revenues from the project would be about $430,000. The calculation of payroll tax revenue exempts about 15% of the employees from the tax because banks, insurance companies, and owners of businesses with tax liabilities of less than $500 do not pay business taxes under the ordinance. The owners of the project would pay a 0.3% gross receipts tax on their rental income. The estimated total annual rental income for the project would be $10 million (1983 dollars). Gross receipts tax revenues therefore would be about $30,000. Total payroll and gross receipt tax revenues would represent a net increase in payroll and gross receipt taxes generated by the site, as no local business taxes are currently generated by the site at present (see Table 7).

The 1.5% payroll tax and 0.3% gross receipts tax are the rates approved by Board of Supervisor's Ordinance 118-80 and 119-80. These rates could be increased in the future if the Board of Supervisors enacted new ordinances increasing payroll and gross receipt tax rates./7/

Sales and Parking Taxes

Sales tax revenues would be generated by employee expenditures. Based on the City's share of the sales tax (a rate of 1.25% of gross retail sales), projected annual sales tax revenues accruing to the City from expenditures of project employees for retail goods would be about $19,000./8/ A 15% parking tax collected by the proposed garage on the site would generate about $18,000 in revenue to the General Fund, based on annual gross receipts of $120,000.

Utility Taxes

General Fund revenues are generated to the City by utility taxes on water, gas, electricity and telephone. The existing site utility use is very limited and negligible revenue (under $100) to the City is generated from this tax.

Based on estimates of utility use, the project would generate about $45,200 annually from utility taxes (see Table 7)./9/

Total Revenues

General Fund revenues for the City and County of San Francisco from the project would total about $1.03 million, based on the tax rates and fees in effect in early 1983. General Fund revenues from the existing uses on the site totalled about $21,400 in 1982; the project would result in about a $1.01 million net increase in General Fund revenues (see Table 7). Projected total and net revenues accruing to the General Fund from the site are based on 1982-83 tax rates and business conditions. Total revenues could change if: property tax distribution to the City and County changes in future years; payroll taxes fluctuate due to employee salaries; office and retail rents fluctuate, thereby affecting gross receipts tax; and, if costs for utilities change, particularly telephone costs, which are the largest component of the total utility users tax.

Costs

Muni

The estimated 1980-81 (most recent Muni estimate) net marginal cost (or increase in the deficit for Muni operations) per additional ride is $0.39./9/ The project would generate about 188,650 rides per year which could generate a cost deficit to the Muni of about $73,600./10/ The project would pay for this deficit through its contributions to the General Fund. In the 1982-83 budget, 10% of Muni's revenues were allocated from the General Fund. Based on the total General Fund revenues that would be generated by the project, the contribution to Muni would be about $101,100 (1983 dollars) after project occupancy. Based on the marginal cost figures provided by Muni, the project would more than offset the Muni deficit generated by the project through its revenue contribution to the General Fund. This conclusion should be qualified because the Muni deficit-per-mile figure is based on 1980-81 data, the marginal cost is based on all rides and not peak-period riders, and the total project-related deficit is calculated using only those workers who would use

Muni as their primary mode of transportation while excluding those workers who would use a combination of transportation modes, such as Muni and Southern Pacific.

TABLE 7: DIRECT NET TAX REVENUES GENERATED TO THE GENERAL FUND FROM THE PROPOSED PROJECT

Tax Category	Tax Rates (1982-83)	REVENUES Existing Site	Proposed Project	Net Increase
Property Tax	85.3% of $1.17/$100 fair market value	$21,400	$489,500	$467,100
Payroll Tax**	1.5% of gross payroll expenditures	negligible	431,300	431,300
Gross Receipts Tax	0.3% of total rental income	negligible	29,700	29,700
Sales Tax**	1.25% of gross retail receipts	negligible	19,000	19,000
Parking Tax	15% of gross receipts	negligible	18,000	18,000
Utility Tax*	0.5-0.55% of gross expenditures	negligible	45,200	45,200
TOTAL		$21,400	$1,032,700	$1,011,300

*Rounded to nearest $100.
**See Notes /4/-/8/ on p. 78 for sources and assumptions used to derive payroll, gross receipts, sales and utility tax revenues.

SOURCE: Environmental Science Associates, Inc.

Effective April 1, 1982, the Muni fare per ride was increased from $0.50 to $0.60. The increase was triggered primarily to meet the fare box revenue requirements of Assembly Bill (AB) 1107. AB 1107 allows Muni to receive a portion of the one-half cent BART sales tax revenue for operating expenses provided that at least one-third of Muni's annual operating cost is paid from fare box revenues.

The San Francisco Board of Supervisors, on April 27, 1981, approved an ordinance (224-81) to assess new downtown commercial development to support Muni./11/ The plan called for levying a one-time fee of up to $5.00 per gross sq. ft. upon construction of new downtown office space. The ordinance,

currently in litigation, would contribute funds for operating costs and capital improvements for Muni transit services. Assuming the one-time fee is upheld, the project could generate up to about $1.7 million in one-time fee revenues to Muni.

On February 1, 1982, the Board of Supervisors approved by resolution a measure declaring its intent to form a Core Area Transit Maintenance District, determining that a portion of public transit is provided Downtown in lieu of public parking places, and to impose upon real property within the area an annual payment for transit maintenance based on gross floor area. The project site is within the proposed district and would be subject to the legal assessment provisions finally adopted. On January 3, 1983, the Board of Supervisors tabled action on the assessment district plan indefinitely.

According to a memorandum entitled "Muni's Plans to Accommodate Downtown Growth" issued by Dean Macris, Director of Planning, August 5, 1982, Muni expects to be able to meet projected cumulative demand due to downtown office development without new City taxes. According to the worst-case scenario in the memorandum, the San Francisco Municipal Railway Improvement Corporation, a non-profit corporation established in 1971 for the purpose of selling bonds for transit improvements, may have to raise about $111 million through the sale of bonds over a 10-year period to finance Muni expansion.

Muni has received a federal grant including $31 million in federal monies and $8 million in local and state monies; this revenue will be used to purchase new equipment, including 110 standard diesel buses and a number of articulated buses. Muni also intends to purchase 57 articulated buses (31 diesels and 26 electric trolleys) with $21 million it will receive from the General Fund as authorized by the passage of Proposition B in November, 1982, and subsequently adopted by the Board of Supervisors. These revenues are for capital costs as opposed to the one-time transit impact fee, which would be used for both operating and capital expenses.

BART

In the 1981-82 fiscal year, the estimated net operating cost per passenger for BART is $1.05 over and above fare box and other revenues./12/ Based on about 97,600 rides per year, the estimated annual BART net operating cost over fares attributable to the project would be $102,500./13/ The project would generate a net total of about $9,200 in revenues to BART, including about $3,500 in property tax revenues, and about $5,700 from the 75% of the 0.5% BART sales tax. This amount does not include the remaining 25% of the 0.5% BART sales tax revenue distributed among BART, Muni and AC Transit by MTC. After subtracting BART's revenues from sales and property taxes that would be generated by the project, the net operating deficit of BART due to the project would be about $93,300. BART's operating deficit is covered primarily by federal sources and also from capital reserves and state funds.

For Fiscal Year 1981-82, BART attained a net operating surplus of $7.6 million after apply $67.3 million in financial assistance from property taxes, the 0.5% BART sales tax and state aid. In 1981-82, BART used $2.6 million of this surplus to purchase capital equipment. The "BART 1982-87 Five-Year Plan" (adopted June 24, 1982) projects an overall operating surplus (after property tax, sales tax and other governmental assistance) of $60.4 million from Fiscal Year 1982-83 to 1986-87. These funds could be applied to capital improvements by BART to meet cumulative transit needs of the region.

BART recently increased its base fare in order to increase fare-box revenues to fund the capital improvement plan. The estimated 1981-82 per-paid-passenger fare deficit will change as a result of the increase. The change in the net deficit per passenger resulting from the fare increase is not currently available.

On December 3, 1982, Congress approved a $0.05-per-gallon increase in the gasoline tax; $0.01 of this tax is earmarked for transit. The measure includes returning a minimum of 85% of state-generated gasoline taxes to the states. It is not known at this time how this revenue would be distributed.

Costs and Net Revenues

Costs to San Francisco for providing municipal services to the proposed project are difficult to estimate. Most evidence indicates that overall costs per unit of service provided (per sq. ft. or per employee) to the new building would be lower than for the existing buildings (see Appendix C, Table C-3, p. 156). This reduction in per sq. ft. costs is primarily due to improvements in fire and security protection systems in new construction. Costs for water and sewer service would be paid through user charges.

In general, existing public facilities, equipment and labor are adequate to serve the project. While costs for servicing the proposed project would be greater than for the existing development because of the increased floor area and employment, the cost per unit of service would not increase, and may actually decline (see Appendix C, Table C-3, p. 156 for a summary of studies on the costs of serving downtown).

CUMULATIVE AND INDIRECT EFFECTS

Downtown Office Space

The proposed project, together with other major downtown office buildings which are under formal review (about 4 million sq. ft.), have been approved (about 5.9 million), and are under construction (about 8.9 million), would add about 18.8 million sq. ft. of office space if all were to be built (as of January 27, 1983; see Appendix A, Table A-2, p. 137). Less the 1.5 million gross sq. ft. of space which would be demolished for new buildings, the net increase would be about 17.3 million gross sq. ft. If all 17.3 million sq. ft. of office space were to be completed by 1990, there could be a short-term softening in demand while the market adjusts itself to absorb the new space. During this period upward pressure on commercial rents may be expected to be relieved, especially in the core of the downtown area, and vacancy rates would rise. It is possible that the number of proposed new office developments could decline if there is not sufficient demand for office space presently planned or under construction, and for office space that will become available due to existing leases that will expire. A slowed growth rate in downtown

would be indicative of a balancing of supply and demand with diminished pressure for replacement of older buildings with new ones, and for conversion and rehabilitation of existing low-intensity retail, warehouse and industrial use with office use, most notably in the South of Market area. Growth of the office sector at a "normalized" rate would then be expected.

Housing

The relationship between downtown office growth and housing demand in San Francisco was discussed in a report prepared by Recht, Hausrath and Associates, Economists, that appears as Appendix C, pp. 289-329, of the 101 Montgomery Street EIR, certified by City Planning Commission Resolution 8941, May 7, 1981. This report is available for public review at the Office of Environmental Review, 450 McAllister St., 5th Floor, and is hereby incorporated by reference into this EIR pursuant to Section 15149 of the California Environmental Quality Act (CEQA) guidelines. In summary, this document states that relatively high wages and employment opportunities are attracting people to San Francisco, but many people cannot afford the high housing costs in the City. The report estimated the residency patterns of new households that would be attributable to a new high-rise office building and discussed various employment growth assumptions and their housing market implications.

If the assumptions used and explained in the 101 Montgomery St. EIR were applied to cumulative office development, i.e., 15% to 30% of the new employees generated by cumulative office development would be expected to move to San Francisco and the average household would be occupied by 1.4 downtown workers, between about 7,400 and 14,800 new households attributable to new office space development would add to the housing demand in San Francisco. If the assumptions used in the formula prescribed by the Office Housing Production Program (OHPP) Interim Guidelines of January 1982 were used (i.e., 40% of the new employees attracted to the new jobs created would want to live in San Francisco and the average household would be occupied by 1.8 downtown workers), about 15,400 new households attributable to new office space development would add to the housing demand in San Francisco. These projections of new households are based on 17.3 million gross sq. ft. of net

new office space, which includes developments listed in Table A-2, p. 137. The employment and housing projections shown in Table C-1, p. 154, exclude employees in existing buildings to be demolished on the sites of proposed buildings.

The new demand could be accommodated through additions to the housing stock, increases in the number of office workers per household, or change in existing occupancy. Large additions to the San Francisco housing stock are not anticipated in the near future because housing construction has declined due to high costs and interest rates. Factors independent of office development and outside the control of the City, for example immigration, interest rates, State and Federal tax policies, and economic trends, also influence the housing market. Census data indicate that the number of persons per household has historically been declining. This demographic trend will probably not reverse itself in the next few years due to a variety of factors, including divorces and separations, departure of young adults from families, and the increasing proportion of elderly population. It has been suggested that gentrification -- the replacement of low-income households by more affluent ones -- could occur./14/

Fiscal Considerations

Net costs of providing services to cumulative downtown development are difficult to quantify. Appendix C, Table C-3, p. 159, discusses some of the various approaches that have been attempted to address the issue of net fiscal costs of downtown development.

According to some of the studies, downtown development could result in an initial fiscal benefit. Since revenues to the City would probably increase at a slower rate than costs, due to California Constitution Article XIII A (Proposition 13) limitations on property tax increases, there could be a time when cumulative costs of providing services to currently proposed and approved development would be higher than revenues provided. This would be the case only if no changes in taxing policies occurred, the rate of new development declines, or the proposed development is not sold at some future date.

NOTES - Employment, Housing and Fiscal Factors

/1/ Indirect employment projections are based on the Bay Area Input-Output Model from Cooperative Extension Service, University of California, Berkeley, San Francisco Bay Area Input-Output Model 1967-1974, July 1978. A multiplier of 1.18 was used for FIRE and 1.55 for construction.

/2/ Employment Development Department, January 1983, California Labor Market Bulletin.

/3/ 101 Montgomery Street Final EIR, EE 80.26, certified May 7, 1981.

/4/ Questor Associates, Feasibility of Performing a Housing Affordability Analysis, June 15, 1982.

This study is on file and available for public review at the Office of Environmental Review, 450 McAllister, 5th Floor.

/5/ Tax Collector's Office, Payroll Expense Tax and Business Tax Ordinances.

/6/ See 466 Bush Street Final EIR, EE 81.175E, certified August 20, 1982, pp. 41-42. That EIR contains a detailed discussion and review of several sources for the average annual wage of $25,000 for downtown office workers.

/7/ Buck Delventhal, City Attorney, telephone communication, September 7, 1982 and Diane Berry, City Attorney, telephone communication, September 20, 1982.

/8/ Taxable expenditures within the central business district per office worker were $715 per year based on a $16,300 income in 1974 (San Francisco Planning and Urban Renewal Association (SPUR), Impact of Intensive High Rise Development in San Francisco, Detailed Findings, June 1975). Based on an average salary of about $25,000 in 1983, taxable expenditures per employee would be about $1,096.

/9/ Annual utility user's tax revenues were calculated as follows, using 1982 utility rates:

water:	1.6 million cubic ft. per year x $0.00414 per cubic ft. x 5.5% tax = $265.
gas:	26,000 therms per year x $0.49 per therm x 6% tax = $764.
electricity:	4.2 million KWH per year x $0.0707 per KWH x 6% tax = $17,816.
telephone:	342,770 gross sq. ft. x $1.40 per sq. ft. x 5.5% tax = $26,393.
TOTAL	$45,238.

/10/ According to Bruce Bernhard, Muni Chief Accountant, telephone communication, August 10 and 23, 1982, the average $0.39 deficit per mile is based on 1980-81 Muni budget figures of an additional cost per ride (marginal cost) of $0.71 and an average fare revenue per trip of $0.32. Muni is unable to provide more recent data on cost and revenue figures per passenger. The deficit due to the project would be: 1,390 employees x 29% ride Muni x 468 rides per year x $0.39 deficit = $70,663. The 29% transportation modal split is taken from the Department of City Planning, October 1980, "Guidelines for

Environmental Evaluation - Transportation Impacts." The 468 rides per year assumes 260 work days per year, two rides per day, and absenteeism of 10% (vacation, holidays and sick days).

/11/ The project sponsor is a member of a class of owners of property in the downtown area which is challenging the legality of the Transit Impact Development Fee Ordinance, by Action No. 79-0705 now pending in San Francisco Superior Court. The project sponsor has not agreed that the Ordinance is valid or with the assumptions set forth here concerning the impact of the project, or other similar projects in the downtown area, on the Muni.

/12/ Sy Mouber, Manager of Public Information, BART, telephone communication, August 10, 1982. The $1.05 average cost per ride is based on all operating costs and revenues and does not include capital expenditures.

/13/ 1,390 employees x 15% ride BART x 468 rides/year x $1.05 = $102,457.

/14/ Report of the Citizen's Housing Task Force, San Francisco, July 29, 1981, and Berkeley Planning Associates, Displacement in San Francisco, September 2, 1980.

E. TRANSPORTATION

CONSTRUCTION EFFECTS

Traffic flow along Main St. would be altered during the construction period by truck traffic into and out of the site. The sidewalk area would be enclosed by a construction fence and a temporary pedestrian way would be located in the east parking lane of Main St., subject to approval by the Department of Public Works. An average of 30 truck trips per day for two months would be needed to haul demolition and excavation debris to a fill area near Innes St. in San Francisco via Mission St., The Embarcadero, Third St. and Innes St. Loading of haul trucks would occur within the construction site. During the two-year construcion period, approximately five construction-related truck trips per day would occur.

Off-site parking for workers would be arranged for by the contractor. Commonly, a facility is leased or reimbursement of worker parking costs is arranged. In any case, demand for parking in the area would increase temporarily.

TRAVEL DEMAND ANALYSIS

An estimate of the amount of travel associated with the proposed project has been forecast through an aggregate travel demand modeling process using a generation/distribution/assignment model in which the project is treated as an attractor/generator of work and non-work related travel in proportion to the number of square feet of net new office and retail space and the number of dwelling units (see Appendix D, p. 160, for further discussion). Travel is distributed to available modes using modal split data specified by the Department of City Planning (see Table D-3, p. 166, in Appendix D)./1/

The travel from the office portion of the project has been assumed to occur at the rate of 17.5 total (57% work and 43% non-work) person trip ends (pte) per 1,000 net sq. ft. of new office space. Existing retail space is vacant and the total proposed office space is 342,800 gross sq. ft. The project would generate approximately 4,800 ptes per weekday./2/ The peak hour of project generation was assumed to occur during the peak period of 4:00 to 6:00 p.m. on weekdays, during which 20% of the daily (24-hour) office travel and 10% of the daily retail and residential travel were assumed to occur. The project would generate about 960 person trip ends during the p.m. peak hour.

A total of about 18.8 million gross sq. ft. of new office space is proposed, approved or under construction in the City. Table A-2, p. 137, in Appendix A, shows the projects included in the cumulative analysis. About 1.5 million gross sq. ft. of existing office space would be replaced by proposed development, resulting in about 17.3 million gross sq. ft. of net new office space (these numbers are not additive due to rounding). This growth would generate approximately 51,750 person trip ends during the weekday p.m. peak hour.

Peak-hour travel by mode for the project and other office developments is shown in Table 8. The modal assignments have been made assuming existing travel patterns and do not attempt to predict any modal shift (see Appendix D, p. 160, for further discussion). As the bridge and freeway system serving the City is currently near capacity during peak hours, the present population of persons traveling by single-occupant auto might be expected to change in the

future. Much of the City-wide peak-hour increase might be expected to be accomodated by a shift from single-occupant automobile to ride sharing or public transit.

In this and other San Francisco EIRs, a land-use type of approach has been used to estimate employment and the resultant transportation impacts of both the proposed project and cumulative development. An alternate type of approach is to forecast travel demand based upon regional projections of employment share (employment trend approach)./3/ Appendix D, pp. 170-174, contains a discussion of the difference between the two approaches.

TABLE 8: PROJECTED* PEAK-HOUR PERSON-TRIPS BY TRAVEL MODE

Modal Type	Projects** under Construction	Approved Projects**	Projects** under Formal Review	123 Mission Project	Total
Auto	8,050	4,830	3,460	320	16,660
Muni	6,320	3,820	2,750	250	13,140
BART	4,270	2,570	1,850	170	8,860
AC	1,980	1,180	830	80	4,070
SamTrans	290	170	120	10	590
SPRR	1,080	650	470	40	2,240
GGT	950	570	410	40	1,970
Ferry	200	120	80	10	410
Other	1,710	1,470	1,320	40	4,600
TOTAL	24,850	15,380	11,350	960	52,540

*Projected based on distribution shown in Table D-3, Appendix D, p. 166.
**Individual developments are listed in Table A-2, Appendix A, p. 137. The 123 Mission project has been separated here from developments under "Formal Review" totals.

SOURCE: Environmental Science Associates

TRANSIT

An analysis was made of the cumulative transit impacts due to development in Downtown San Francisco as set forth in the Department of City Planning Guidelines. The analysis was conducted on a system level which considered only the lines or blocks of lines that serve the project site, and not the

entire transit system. As a "worst case", this analysis assumes no expansion in the transit system and the results are not dependent on increased City, State or Federal funding. If existing City, State or Federal funding were to decrease, operating conditions on the Muni and other carriers would be expected to deteriorate. Conversely, if funding were to increase over existing levels, operating conditions would be expected to improve.

The results of the transit analysis are shown in Table 9, p. 83. The table shows projected ridership for the existing plus cumulative condition, which includes the 17.3 million gross sq. ft. of net new cumulative office development and the 0.6 million gross sq. ft. of net new retail development. Ridership from the project and load factors based upon existing capacity are also shown in Table 9. As all of the transit agencies have five-year plans for improving service, load factors based upon capacity proposed to occur in the current five-year plan cycle (1982-1987) for each transit agency are also shown in Table 9. Existing capacities are shown in Appendix D, Table D-1, p. 162. Proposed capacities are discussed in Appendix D, p. 161.

The project would generate approximately 250 p.m. peak-hour Muni trips. The increase due to the project during the p.m. peak hour would represent about 1.0% of the increase in cumulative development demand in downtown San Francisco (projects included in the cumulative demand calculation are listed in Table A-2, Appendix A, p. 137). Line-by-line Muni loading projections (based upon existing capacity only) are shown in Appendix D, Table D-2.

Under the existing plus cumulative conditions, after the addition of the ridership from the projected 17.3 million gross sq. ft. of net new cumulative office and 0.6 million gross sq. ft. of net new retail development demand on most of the affected Muni lines would exceed existing (1983) capacity. This would also be the case for BART transbay, Southern Pacific and SamTrans. These conditions are shown in Table 9 in the future without project column under existing capacity Load Factors, where load factors exceed 1.00. Addition of the project ridership to the existing plus cumulative ridership would add to the above conditions but would not cause any of the routes under capacity to exceed capacity.

TABLE 9: AFTERNOON PEAK HOUR OUTBOUND TRANSIT RIDERSHIP AND LOAD FACTORS (L.F.)/a/

			PROJECTED RIDERSHIP/ EXISTING CAPACITY				PROJECTED RIDERSHIP/ PROPOSED CAPACITY/b/			
	Existing (1982)		Future Riders w/o project/c/		Future Riders plus Project		Future Riders w/o project		Future Riders plus Project	
Agency	Riders	L.F.	Riders	L.F.	Riders	L.F.	Riders	L.F.	Riders	L.F.
Muni/d/	23,240	0.91	36,180	1.42	36,430	1.43	36,180	1.19	36,430	1.20
BART										
Transbay	13,600	0.98	19,330	1.28	19,440	1.29	19,330	0.78	19,440	0.79
Westbay	6,445	0.61	9,430	0.90	9,490	0.91	9,430	0.57	9,490	0.58
AC Transit	9,560	0.72	13,570	1.02	13,650	1.02	13,570	1.02	13,650	1.02
SamTrans	1,700	0.78	2,290	1.05	2,300	1.06	2,290	0.37	2,300	0.37
SPRR/CalTrans	5,180	0.78	7,390	1.12	7,430	1.13	7,390	1.12	7,430	1.13
Golden Gate										
Motor Coach	4,510	0.66	6,440	0.94	6,480	0.94	6,440	0.75	6,480	0.75
Ferry	800	0.39	1,210	0.58	1,210	0.58	1,210	0.34	1,210	0.34

/a/ Load factor based upon existing (recommended) maximum capacity. A load factor of 1.00 is equivalent to 100% of recommended seated and standing capacity being used. Recommended maximum capacity is less than "crush" loadings that occur occasionally.
/b/ Proposed capacity as specified by each agency's Five-Year Plan.
/c/ Future Riders is the sum of existing riders and riders that would be generated by the 17.3 million gross sq. ft. of office development and the 0.6 million sq. ft. of retail development in the downtown (see Appendix D, p. 160.)
/d/ 1982 Muni ridership is approximate based on a compilation of Muni ridership by the Department of City Planning.

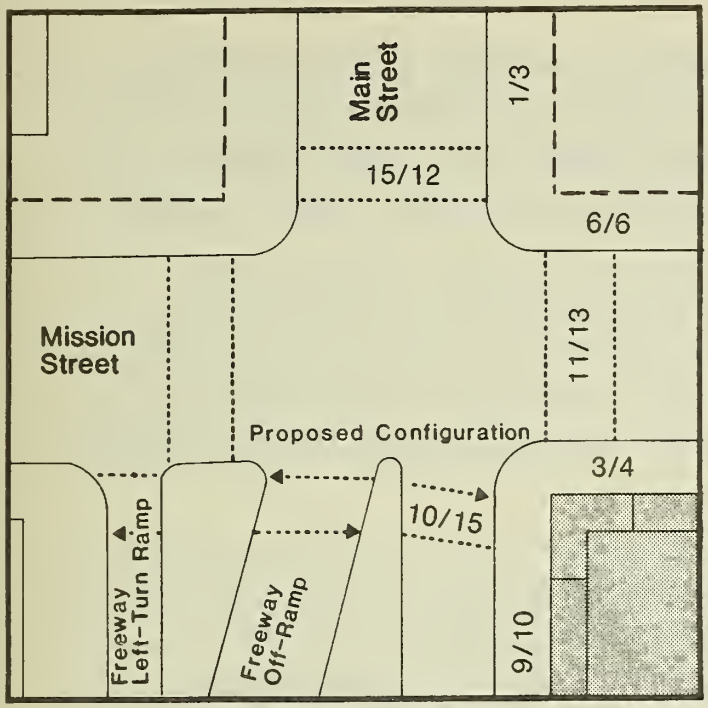
SOURCE: Environmental Science Associates, Inc.

As cumulative demand increases, the length of time of peak loadings would increase, spreading peak-of-the-peak conditions over time. As some lines only operate during heavy demand periods (for example, express service for one to two hours during peak periods), there may not be additional capacity available to allow spreading over time without adding more runs. (Additional runs may not require increases in vehicle fleet size as the additional runs would be extending the peak period level of service over a longer period of time. Additional runs would cause increases in operating and maintenance costs and would generate additional revenue from increased farebox return.)

Assuming that existing funding continues and proposed expansion occurs, the future load factors on the transit agencies would be as shown in Table 9 under the Proposed Capacity Load Factor Loading columns. Average future loadings on Muni would be over capacity for both the future condition with and without addition of the project ridership. Average loadings on both BART Transbay and Westbay, including ridership from the project and from the projected 17.3 million gross sq. ft. of net new cumulative office development and the 0.6 million gross sq. ft. of net new retail development, would not be over capacity with the anticipated five-year plan capacity increase. AC Transit does not have any increases proposed for its transbay service and would, therefore, be operating at 100% of its recommended maximum capacity under future conditions. Average future loadings on SamTrans would be under seated capacity when the anticipated capacity becomes available. Southern Pacific/CalTrain does not have any proposals to increase seated capacity and would, therefore, operate in excess of its recommended maximum capacity under future conditions both with and without the project demand. Average future loadings (including the cumulative demand and the project demand) on Golden Gate Transit would not exceed capacity when the proposed additions become available.

PEDESTRIANS

Figure 25, p. 85, shows pedestrian volumes on the sidewalks and crosswalks in the project vicinity for three conditions: 1) existing volumes; 2) 1987 cumulative volumes; and, 3) 1987 cumulative-plus-project-generated volumes.



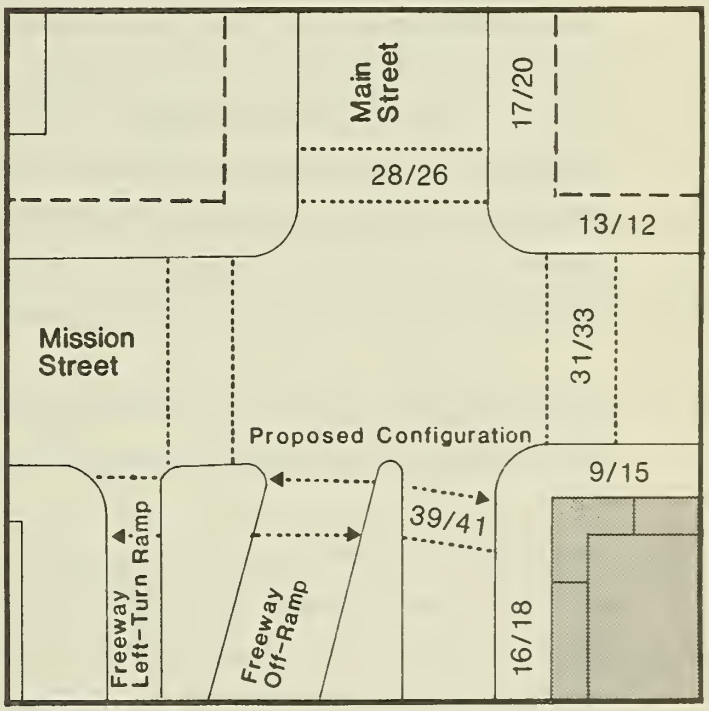
EXISTING CONDITION

SIDEWALK DATA		
SIDEWALK	TOTAL WIDTH	EFFECTIVE WIDTH
Main (south of Mission)	14.1'	10.1'
Main (north of Mission)	15.2'	12.3'
Mission (south side)	14.4'	11.8'
Mission (north side)	14.5'	11.3'

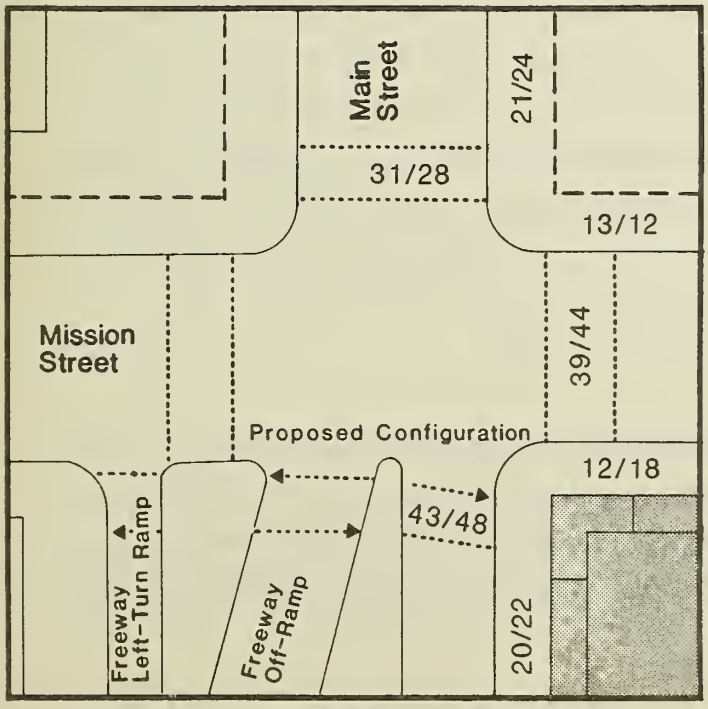
Project Site

20/10 Noon/P.M. Peak Percent of Capacity

Crosswalk



FUTURE CONDITION WITHOUT PROJECT



FUTURE CONDITION WITH PROJECT

FIGURE 25:
PEDESTRIAN VOLUMES AS A PERCENT OF CAPACITY OF SIDEWALK SYSTEM

SOURCE: Environmental Science Associates, Inc.

Volumes for each sidewalk segment or crosswalk are expressed as a percent of the total available capacity (100%). Table D-4, p. 169, describes the condition of pedestrian flows for different volumes, e.g., open, impeded, crowded, jammed, which correspond to the percent of available capacity used.

The existing plus cumulative condition includes increases from projected cumulative development including buildings proposed or under construction at 160 Spear St., 201 Spear St., 150 Spear St., 135 Main St., 141 Steuart St., 121 Steuart St., 101 Mission St., the Pacific Gateway Building and the Federal Reserve Bank.

The project pedestrian p.m. peak travel has been assumed to be the p.m. peak hour travel (960 pte) less the number of people that would use the 100 proposed on-site parking spaces in the building (290 pte), or 670 person trip ends per hour with 220 occurring in the peak p.m. 15-minute period. Noon hour volumes have been assumed to be similar in magnitude to p.m. peak hour volumes. The primary pedestrian access to the project is proposed to be on Mission and Main Sts. through the covered entry plaza.

At present, the Main St. sidewalk in front of the site has pedestrian volumes that occupy 10% of the available capacity during the p.m. peak hour and 9% of the available capacity during the noon hour; in 1987 with cumulative development, pedestrians would use 18% of available capacity during the p.m. peak hour and 16% during the noon hour; in 1987, cumulative development plus the project would use a total of 22% during the p.m. peak hour and 20% during the noon hour. The Mission St. sidewalk in front of the site, presently has volumes that occupy 4% of the available capacity during the p.m. peak hour and 3% during the noon hour; in 1987 with cumulative development 15% of available capacity would be used during the p.m. peak hour and 9% during the noon hour; in 1987, cumulative development plus the project would use a total of 18% during the p.m. peak hour and 12% during the noon hour.

The Mission St. sidewalk across the street from the site which would be affected by the project's pedestrian travel has existing pedestrian volumes that occupy 6% of available capacity during both the p.m. peak hour and the noon hour; in 1987 with cumulative development 12% of available capacity would

be used during the p.m. peak hour (13% during the noon hour); in 1987, with cumulative development plus the project, volume would remain at 12% of available capacity during the p.m. peak hour and 13% during the noon hour. The Main St. sidewalk at this corner presently has volumes that occupy 3% of the available capacity during the p.m. peak hour and 1% during the noon hour; in 1987 with cumulative development 20% of available capacity would be used during the p.m. peak hour and 17% during the noon hour; in 1987, cumulative development plus the project would use a total of 24% during the p.m. peak hour and 21% during the noon hour.

The crosswalk crossing Mission St. in front of the site has present volumes that occupy 13% of available capacity during the p.m. peak hour (11% during the noon hour); in 1987, 33% of available capacity would be used during the p.m. peak hour (31% during the noon hour); 1987 cumulative plus project pedestrian volumes would use 41% of available capacity during the p.m. peak hour (39% during the noon hour). At present, the crosswalk crossing Main St. in front of the site has pedestrian volumes that occupy 15% of available capacity during the p.m. peak hour (10% during the noon hour); in 1987, 44% of available capacity would be used during the p.m. peak hour (39% during the noon hour); 1987 cumulative plus project pedestrian volumes would increase use to 48% of capacity during the p.m. peak hour (43% during the noon hour).

At present, during the p.m. peak hour, the crosswalk crossing Main St. at the north side of the intersection has pedestrian volumes that occupy 12% of available capacity; in 1987, 26% of available capacity would be used; 1987 cumulative plus project pedestrian volumes would use 28% of available capacity. Project pedestrian volumes would account for approximately 55% of the cumulative development increase on the Main St. sidewalk and 30% of the increase on the Mission St. sidewalk in front of the site.

TRAFFIC

Traffic impacts for the project were analyzed at freeway access ramps serving the downtown and at the intersections on the project block. For estimation of project-generated traffic volume increases at freeway access points, conventional techniques for estimating traffic generation were used. Traffic

was based on numbers of on-site employees, visitors and residents; it was assumed that as long as parking would be available within walking distance, most drivers would continue to drive to work. Analysis of the streets which serve the project as feeders to or from freeway ramps (Mission and Beale Sts.) was assumed to represent the "worst case" or greatest traffic impacts. Impacts from the project on other streets would be less as project traffic on them would be less concentrated. For local streets surrounding the project site, traffic volume increases were assumed to be proportional to the capacity of the proposed on-site garage. It was assumed that routes of drivers going to other garages would be sufficiently dispersed to have a negligible effect on volumes on streets adjacent to the project.

The project is proposed to have about 100 off-street parking spaces operated with a valet system. The project impact at the intersections closest to the project site would be a result of service vehicle traffic and traffic using the project parking facility assuming worst-case conditions of all 100 vehicles entering the site during the a.m. peak hour and exiting onto the streets during the p.m. peak hour.

Traffic from cumulative development would cause the level of service to deteriorate from Level of Service D to F at the intersections of Mission/Beale and Mission/Main. Addition of the cumulative demand at the intersection of Mission/Spear would shift operations from Level of Service A to C (see Table 10). The impact of the project would reduce the level of service from C to D at the intersection of Mission/Howard and lessening of the level of service of traffic operation on the street system relative to the existing-plus-cumulative conditions would be imperceptible.

Increases in pedestrian activity would cause some delay to turning vehicles in the project vicinity. An effect of increased congestion at the intersections of Mission/Beale and Mission/Main would be a redistribution of travel patterns to less traveled routes and, potentially, a shift from automobile to transit or paratransit use.

TABLE 10: PROJECTED PEAK-HOUR INTERSECTION VOLUME-TO-CAPACITY RATIO NEAR THE PROJECT SITE

Intersection	Existing (1982) V/C	LOS	Future* without Project V/C	LOS	Future with Project V/C	LOS
Mission/Beale (p.m.)	0.89	D	1.62	F	1.65	F
Mission/Main (a.m.)	0.85	D	1.34	F	1.40	F
Mission/Spear (p.m.)	0.48	A	0.72	C	0.72	C
Main/Howard (p.m.)	0.74	C	0.77	C	0.81	D

*Future is the sum of existing traffic and traffic that would be generated by the 17.3 million gross sq. ft. of office development and the 0.6 million sq. ft. of retail development in the downtown (see Appendix D, p. 160.)

SOURCE: Environmental Science Associates

PARKING EFFECTS

The project would provide 100 spaces of long term parking. Using the methodology described in Appendix D, p. 167, long-term parking demand for the 17.3 million gross sq. ft. of net new cumulative office development and the 0.6 million gross sq. ft. of net new retail development proposed in the greater downtown area has been estimated to be about 16,700 spaces. The project could create an additional long-term parking demand of about 300 spaces. The project would be 2% of the total long-term demand in the downtown. The short-term parking demand from the cumulative office and retail development could be about 1,800 spaces. The project could add demand for about 30 spaces to this. The project would be 2% of the total short-term demand. The total parking demand (both long and short-term) could be about 19,000 spaces of which the project would be 2%.

A recent survey by the Department of City Planning shows that there are about 37,000 off-street parking spaces in the C-3 district and an additional 6,500 spaces in the area bounded by The Embarcadero, Folsom, Eighth and Bryant Sts./4/ Based on average occupancy, about 4,100 spaces are available on a daily basis. The project would have the potential to provide 100 spaces for a

total of 4,200 spaces. The cumulative demand for the whole downtown area including the project would create a theoretical net deficit of 14,600 spaces.

Parking demand has been based upon existing travel patterns and is not dependent upon the availability of parking spaces or by the ability of the freeway and bridge system to carry the additional demand. Freeway and bridge capacity into downtown is essentially fixed at existing levels as major construction would be required to add new capacity. Therefore, the net deficit of 14,600 spaces does not mean that 14,600 autos would be driving on City streets in search of parking. Rather, the travel demand represented by the parking deficit would most likely shift to ridesharing or transit. Increased ridesharing would not only reduce parking demand but would also reduce traffic impacts from the worst-case impacts shown in Table 10, p. 89. Increased transit use would add to the demands on the regional and local transit systems, particularly Muni.

The deficit may be less than this estimate as the parking survey did not inventory parking in the Civic Center area, the areas west of Eighth St., south of Bryant St. or north of Washington St. (all of which contain proposed projects which are included in the cumulative analysis). The survey did indicate that inside the study area about 6,000 parking spaces have been added since 1967 and approximately 1,400 are proposed to be added (exclusive of parking spaces to be provided in Yerba Buena Center).

An alternative approach to calculating the short-term parking deficit is to project the short-term parking demand that might be expected to compete for the parking in the project area. Not all of the cumulative 1,790 space short-term demand would attempt to park in the project area as not all of the cumulative development would be located near the project. The assumption that short-term parkers would attempt to park within a 5-minute walk of their destinations (approximately 1,000 feet) was used to define the area that would be affected by the project short-term parking demand.

Within the near vicinity (about 1,000 ft.) of the project area are about 2,860 commercially available off-street parking spaces. About 490 of these spaces are located on sites of developments approved or under formal review. Average

daytime occupancy in the spaces expected to remain is about 97% with about 80 spaces open at any one time.

Cumulative short-term parking demand from the project and from buildings under construction near the project site (that would compete for parking within 1,000 ft. of the site) is projected to be about 120 spaces. The project would represent about 27% of this demand. The net cumulative short-term parking in the area within 1,000 ft. of the project would not be able to meet the cumulative short-term demand. This estimate does not take into account any competition from long-term parkers. The project would not supply short-term parking because the spaces would be tandem and the sponsor intends that they be long-term.

Truck Deliveries and Loading

The project would provide two 35-ft. truck loading spaces on the ground floor and two van loading spaces on the first parking level. The truck loading spaces would have access from Main St. The driveway for the garage would also be located on Main St. The driveways would be placed next to each other. The size and number of docks would meet requirements of the City Planning Code regarding loading.

Total service vehicle travel and average hourly service vehicle demand have been calculated based on data published in Center City Circulation Program: Pedestrian Circulation and Goods Movement./5/ The building would generate approximately 70 service vehicle stops per day. Average hourly loading space needs are given in terms of spaces per hour per 10,000 gross sq. ft. of building space; average demand for the project would be 3.4 spaces per hour and peak hourly demand would be 4.3 spaces. The four loading and service spaces proposed would generally meet the average hourly demand and would sometimes accommodate the peak hour demand for loading space, based on the published demand data, depending on the sizes of trucks using for deliveries.

City Planning Commission (CPC) Resolution 9286 recommends a total of three spaces for the uses in the project./6/ These spaces would have to be of sufficient size to handle standard single unit trucks and smaller vehicles.

The project is proposing to provide two 35-ft. spaces. Analysis of the design of the loading/service area and the access ramps indicates that standard single unit trucks and smaller vehicles would have to back in from Main St. Tractor-trailer combinations, which are typically 55 ft. in length, would not be able to be accommodated in the loading bays. Tractor-trailer deliveries, however, are expected to be infrequent and would be limited to moving vans and some deliveries of heavy office equipment and furniture. At these times on-street parking would be required. The project would include direct access to the freight elevator from the loading docks for the office floors (see Figure 3, p. 9).

The proposed curb cut of 80 ft. would exceed the maximum 24 ft. recommended by CPC Resolution 9286. The curb cut would be approximately 50% of the project frontage, which would exceed the 30% recommended by CPC Resolution 9286. Vehicle-pedestrian conflicts at the sidewalk adjacent to the garage entrance would be generated due to the introduction of development in comparison to the vacant lot at present.

NOTES - Transportation

/1/ The regional distribution, office trip generation, trip purpose and peak hour percentage are from Attachment 1 of the Guidelines for Environmental Impact Review, Transportation Impacts Department of City Planning, October 1980, and the modal split assignment is from Attachment 2. Supplemented by survey data collected by Environmental Science Associates, Inc.

/2/ 342,000 gross sq. ft. of office space X 80% (efficiency) X 0.0175 person trip ends per day/net sq. ft. = 4,800 person trip ends per day. (Efficiency converts gross square footage to net square footage.)

/3/ The Department of City Planning, Office of Environmental Review (OER), has issued a memorandum, dated July 2, 1982, dealing with the subject of the differences in the land-use and employment trend approaches, and recommending that both approaches be used in EIRs to give a balanced assessment of future peak transportation demand. This memorandum is on file with and available from the Office of Environmental Review, 450 McAllister St., 5th Floor. The memorandum calls out some of the fundamental differences between the two approaches and also details the limitations of each.

/4/ Inventory of Off-Street Parking Spaces. San Francisco Department of City Planning, May 24, 1982.

/5/ Center City Circulation Program: Pedestrian Circulation and Goods Movement, Working Papers 1, 2, and 3 and Final Report, San Francisco Department of City Planning, 1980.

/6/ City and County of San Francisco, Exhibit A, Off-Street Freight Loading and Vehicle Space Requirement and Guidelines, January, 1982, City Planning Commission Resolution No. 9286.

F. AIR QUALITY

Demolition, earth-moving and construction activities would increase local concentrations of total suspended particulates (TSP). Large particulates would settle quickly and would not be a nuisance or health hazard; fine particulates, less than 30 microns in diameter, would remain suspended for a longer period, and could irritate existing respiratory conditions. The State 24-hour TSP standard (100 micrograms per cubic meter) would probably be violated on and adjacent to the site several times during construction. (The frequency and levels of violation cannot be reliably determined without information on the soil composition and the schedule of use for every piece of earth-moving machinery.)

Upon completion, the project would affect air quality in two ways: emissions would be generated by project-related traffic, and by combustion of natural gas for space and water heating. Transportation sources would account for over 95% of project-related emissions.

Cumulative and project effects on sidewalk carbon monoxide (CO) levels on Mission, Beale and Main Sts. were calculated for 1987, using projected traffic volumes and methods recommended by the Bay Area Air Quality Management District (BAAQMD); the results are shown in Table 11. Project-generated traffic would contribute no more than 0.3 ppm to the one-hour CO concentrations and 0.1 ppm to the eight-hour CO concentrations and would cause no violations of standards.

Estimated daily project-related emissions of CO, hydrocarbons, nitrogen oxides, sulfur dioxide and TSP are shown in Table 12 and compared with existing and future regional emissions, and future emissions from cumulative development in downtown San Francisco. None of the project-related emissions would increase pollutant emissions by more than 0.01% over existing levels in the Bay Area air basin.

TABLE 11: PROJECTED LOCAL WORST-CASE ROADSIDE CARBON MONOXIDE IMPACTS

	Averaging Time	Concentration (ppm)* 1982	Cumulative Development 1987	Cumulative Development + Project 1987
Mission (between Main and Beale)	1-hour	15.6	13.9	13.9
	8-hour	8.8	7.1	7.1
Beale (between Mission and Market)	1-hour	14.8	15.2	15.2
	8-hour	7.7	6.7	6.7
Main (between Mission and Market)	1-hour	16.1	16.5	16.8
	8-hour	8.3	7.2	7.3
Standards	1-hour	35.0	35.0	35.0
	8-hour	9.0	9.0	9.0

*Calculations were made for worst-case (poor-dispersion) meteorology. Background concentrations were assumed to be 10.3 ppm for one hour and 6.5 ppm for eight hours in 1982, and 8.4 ppm for one hour and 5.2 ppm for eight hours in 1987, based on the average of the annual second-highest values monitored over the past three years and adjusted for current and future years according to emissions projections.

SOURCE: Environmental Science Associates, Inc., based on BAAQMD, 1975, Guidelines for Air Quality Impact Analysis of Projects, updated for 1981 emission factor revisions.

The project would not directly conflict with the pollutant control strategies recommended by the 1979 and 1982 Bay Area Air Quality Plans, and by itself would have no measurable impact on city-wide or regional concentrations, or on the frequency of standard violations. However, it could incrementally impede the objectives of the Plans by generating additional pollutant emissions in San Francisco and elsewhere in the air basin.

TABLE 12: PROJECTED 1987 DAILY PROJECT AND CUMULATIVE BAY AREA EMISSIONS

Emissions Generator	Pollutant Emissions (tons per day) CO	HC	NOx	SO2	TSP
Proposed Project*	0.234	0.021	0.029	0.003	0.035
Cumulative Development**	12.1	1.07	1.52	0.16	1.82
Entire District (1982)	2,880	615	598	192	498
Entire District (1987)***	2,340	515	543	182	536

*Emissions of CO, HC and NOx include an assumed three minutes of idle time per trip. Idle emission factors are not available for SO2 or TSP. Emissions of TSP include repeatedly airborne dust from roadway surfaces.
**Cumulative development includes projects listed in Table A-2, p. 137 of Appendix A.
***1987 projection based on Association of Bay Area Governments, Bay Area Air Quality Management District, and Metropolitan Transportation Commission, 1982 Bay Area Air Quality Plan, June 1982, p. E-3.

SOURCE: Environmental Science Associates, Inc., based on emissions data from BAAQMD.

G. NOISE

Construction Noise

Project construction would occur in three stages: demolition, excavation and construction of new buildings. Throughout the 23-month construction period, trucks would be visiting the site, initially hauling away dirt and debris and then bringing materials. These activities would temporarily increase noise levels in the surrounding area.

During construction all powered equipment, other than impact tools, would have to comply with the San Francisco Noise Ordinance requirement of a sound level of not more than 80 dBA at 100 feet. If a second piece of equipment is used concurrently with the first it would add about three dBA, making the level about 83 dBA at 100 feet. The ordinance also prohibits construction work at night from 8 p.m. to 7 a.m., if the noise emission from such work exceeds the ambient noise level by 5 dBA at the property line, unless a special permit is

authorized by the San Francisco Department of Public Works. During construction, many types of equipment are used. Typical demolition and construction noise levels anticipated for this project are shown in Table 13.

TABLE 13: TYPICAL OFFICE BUILDING CONSTRUCTION NOISE LEVELS AT 50 FEET

Construction Phase	Average Noise Level
Demolition	84 dBA
Excavation	89 dBA
Foundations	78 dBA
Erection	87 dBA
Finishing	89 dBA

SOURCE: D.N. May, Ph.D., 1978, Handbook of Noise Assessment, Van Nostrand Reinhold Environmental Engineering Series, page 211.

The table indicates average noise levels. Averaging of noise minimizes the apparent impacts of intermittent noises such as piledriving. Therefore piledriving will be discussed separately.

During the five weeks of clearance and excavation, noise levels in the office buildings at 150 Spear St., the 100 Mission St. building, and the 120 Spear St. building would reach as high as 60, 65, and 69 dBA, respectively, with windows closed. Noise at this level would allow continuous communication.

Project construction would require up to six weeks of foundation preparation and piledriving. Conventional unmuffled and unshielded pile drivers emit noise levels of 105 dBA at a distance of 50 ft. each time the driver strikes the pile. The quietest impact piledriver measured by the City generated noise levels of 98 dBA at 50 ft., but is not always compatible with construction requirements./1/

Assuming noise emissions of 105 dBA at 50 ft., and a 6 dBA decrease with each doubling of distance, piledriving would be audible to people on the streets within 1,000 ft. of the project site where not shielded by intervening buildings. Workers in the 120 Spear St. building, adjacent to the site, would

experience intermittent noise levels of up to 85 dBA (with closed windows) during pile driving. Assuming no openable windows, intermittent noise levels as high as 70 dBA would be expected in the 150 Spear St. office building and 80 dBA in the 100 Mission building when piles are driven. During these noise intrusions, only minimal communication would be possible, requiring raised voices at two ft. and shouting at 12 ft. Telephone communication capabilities would be eliminated. Repeated impulse and intermittent sounds of high level (above 70 dBA) appear more likely to disrupt performance than continuous or steady sounds of comparable level./2/ The effects of human exposure to high noise levels have been widely studied. Sounds exceeding 35 to 40 dBA can interfere with sleep./3/ Sounds above 60 dBA interfere with normal speech./3/ When noise levels exceed 70 dBA, people begin to become annoyed./3/ Prolonged exposure to sounds between 90 and 100 dBA can cause hearing damage./3/

The Department of Public Works requires "state of the art" noise control devices during construction on all projects. However, all projects exceed the Noise Ordinance standard of 80 dBA at 100 ft. during piledriving. The lowest dBA sound achieved is in the high 80s at the 100-ft. range. Actual noise emissions are dependent upon soil characteristics, the type of piles, the method of driving and the type of equipment used.

The Department of Public Works also analyzes the impacts of piledriving for every project and frequently requires staggered hours for piledriving. The most frequent requirement in commercial areas is from 1 p.m. to 9 p.m. All measures imposed by the Department of Public Works are negotiable and are subject to revision during construction should circumstances require new action./1/

It should be noted that simultaneous construction may occur on up to three other sites within the same block. Simultaneous construction would be expected to increase the resultant construction noise levels in the area by as much as 3 dBA above the total generated by this project.

NOTES - Noise

/1/ Ray McDonald, Chief Building Inspector, Bureau of Building Inspection, Department of Public Works, telephone communication, July 6, 1981.

/2/ US HEW, Health Services and Mental Health Administration, Occupational Exposure to Noise, 1972.

/3/ Central Institute for the Deaf, Effects of Noise on People, for the US EPA (1971).

H. ENERGY

Energy would be required for demolition of the existing structure, excavation and the removal of debris to a disposal site. An estimated 712 billion Btu at-source would be required during construction. This is the equivalent of about 121,100 barrels of oil (bbl/oil) and includes energy required for fabrication and distribution of materials, as well as direct energy consumption. Direct energy consumption at the site would represent approximately 3.7% of total construction energy consumption. An estimated 26.2 billion Btu at-source (4,500 bbl/oil equivalent) would be consumed for site excavation, transportation of materials, and building construction, including on-site consumption of both gasoline and electricity.

Electricity would be used for lighting, air conditioning, ventilation, elevator operation, office equipment operation, and plumbing system pumping. Natural gas would be used for space and water heating. The project would not incorporate solar energy.

A variable volume air conditioning system with an outside air/return air economizer cycle would be used to conserve energy. This would allow the use of outside air for building cooling, when feasible. Individual light switches would also be used to reduce energy consumption, as required under Title 24 of the California Administrative Code.

According to an estimate made using a State approved computer program, the project would have an estimated annual energy consumption of about 108,000 Btu per sq. ft. Thus, it would better the prescriptive standards of Title 24 of the California Administrative Code which allow consumption of up to 126,000 Btu per sq. ft. annually. The project's estimated annual energy requirement per sq. ft. would be about 50% less than the per-sq.-ft. consumption of the

existing structure on the site when they were occupied. Annual project energy consumption is shown in Table 14.

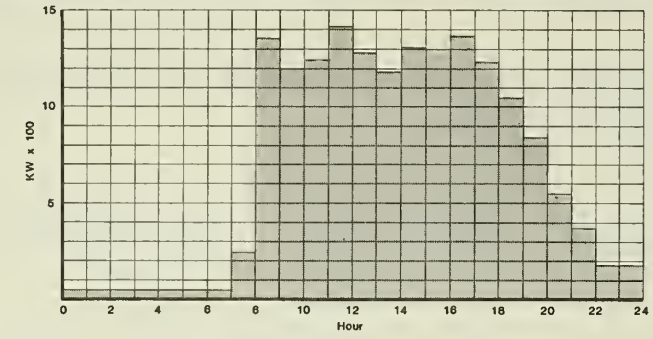
TABLE 14: ESTIMATED ANNUAL PROJECT ENERGY CONSUMPTION

	Units of Energy (in Thousands)	Btu At-Source (in billions)*	Barrel Oil Equiv. (bbl. oil)
Building Operation			
Electricity	4,200 KWH	43.0	7,315
Natural Gas	2,600 cu. ft.	2.9	495
Transportation**			
Gasoline	143 gallons	18.6	3,160
TOTAL PROJECT		64.5	10,970

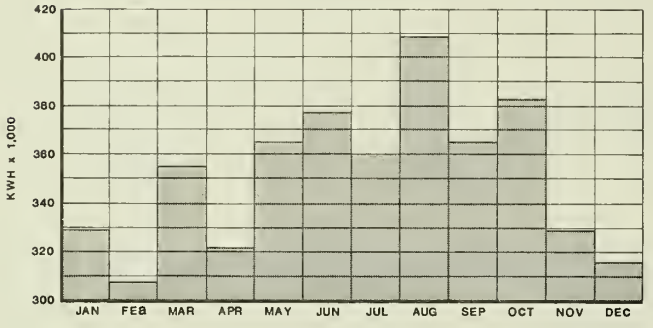
*1 KWH = 10,239 at-source Btu; 1 cu. ft. = 1,100 at-source Btu; 1 gallon = 140,000 at-source Btu; 1 bbl. oil = 5.88 million at-source Btu.
**for vehicle trips generated by the project.

SOURCE: Environmental Science Associates and Skidmore, Owings, and Merrill

The project would have a connected kilowatt load of about 3,600 kilowatts and would consume about 4.2 million kilowatt hours (KWH) of electricity at point-of-use per year./1/ The monthly electrical demand would range from about 310,000 KWH in February to about 410,000 KWH in August. The project's estimated average electrical demand of about 1.1 KWH per sq. ft. per month would be about 85% of the average demand of 1.3 KWH per sq. ft. per month estimated for 12 other high-rise buildings recently proposed in San Francisco./2/ Peak electrical demand would be about 1,400 KWH and would occur at about 11:00 a.m. on Mondays in August. This would not coincide with PG&E's system-wide electrical consumption peak which occurs in late afternoons in August, or with the San Francisco electrical consumption peak which occurs in December or January. Estimated peak daily and average annual electrical demand distribution curves are shown in Figure 26, p. 100.



Peak Day Electrical Consumption



Average Monthly Electrical Consumption

FIGURE 26:

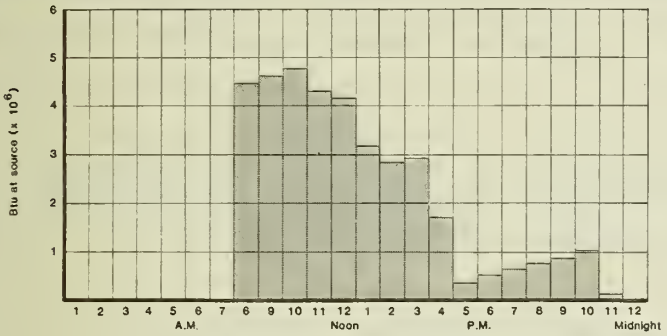
ESTIMATED ELECTRICAL LOAD DISTRIBUTION CURVES

SOURCE: Environmental Science Asaociatee and Skidmore, Owings and Merrill

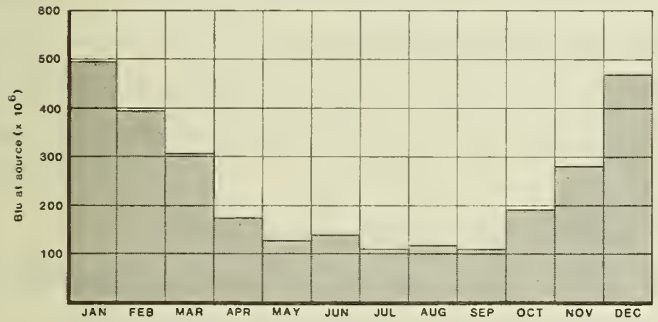
The project would consume about 2.6 million cubic ft. (about 2.9 million Btu at-source) of natural gas annually, or about 217,000 cubic ft. (240 million Btu at-source) per month. This represents an average consumption of about 0.7 cubic ft. per sq. ft. per month for the project, as compared to an estimated average of 2.0 cubic ft. per sq. ft. per month for 12 recently proposed high-rise buildings in San Francisco./2/ Peak demand for natural gas would be about 4,800 cubic ft. per hour, and would occur between 8:00 and 11:00 a.m. on January mornings, as hot water boilers begin heating the building. This would not coincide with the PG&E system-wide peak period for natural gas which occurs in the early evening hours in January. Estimated daily and average annual natural gas distribution curves for the project are given in Figure 27, p. 101.

Vehicle travel generated by the completed project would consume approximately 143,000 gallons of gasoline annually. This is equivalent to about 18.6

billion Btu per year. This projected use is based upon the mix of vehicles expected in California in 1985. In general, statewide vehicle fuel use is expected to decrease until 1985 as the vehicle fleet becomes more efficient and fuel more expensive.



Peak Day Demand of Natural Gas (January)



Average Monthly Natural Gas Consumption

FIGURE 27:

ESTIMATED NATURAL GAS DISTRIBUTION CURVES

SOURCE: Environmental Science Associates and Skidmore, Owings and Merrill

Cumulative energy consumption in downtown San Francisco by approved and recently proposed projects (17.3 million sq. ft.; see Appendix A, Table A-2, p. 137) would amount to more than 300 million KWH of electricity (about 13% of PG&E's projected systemwide increase over the next 10 years) and more than 520 million cubic ft. of natural gas. Transportation associated with this cumulative office development would consume annually about 1.3 million gallons of diesel fuel, about 8.8 million gallons of gasoline, and about 52 million KWH of electricity. Total increase in downtown energy demand would be about 5 trillion Btu annually, equivalent to about 880,000 barrels of oil. The cumulative electrical consumption represents about 0.4% of the annual PG&E system demand in 1981. In 1981, PG&E had a surplus peak generating capacity

of 4,500 megawatts (MW) and in 1985 expects to have a surplus of 4,200 MW. The energy demand presented by cumulative development in San Francisco (peak demand of about 312 MW) could be accommodated by PG&E facilities now and in the future./3/

NOTES - Energy

/1/ Edward D. McCrary, Associate Partner, Skidmore, Owings and Merrill, letter communication, September 13, 1982.

/2/ The following projects have been included in the comparative analysis of energy consumption (to determine an average): 101 Montgomery, 456 Montgomery, Central Plaza, 100 Spear, 160 Spear, 201 Spear, Post/Kearny, 333 California, Pacific Gateway, Montgomery/Washington, Federal Reserve Bank and Bank of Canton. See Appendix G, p. 181.

/3/ Future Generating Facilities and Changes to Existing Facilities (Form R-6), Pacific Gas and Electric Company, April 1, 1982.

I. GEOLOGY, SEISMICITY AND HYDROLOGY

GEOLOGY

Demolition would entail the removal of 8,000 cubic yards of building materials. Excavation for the basement level would extend an average depth of 16 ft. and a maximum depth of 20 ft. below the street grade over the entire site. Up to 12,000 cubic yards of material would be removed./1/ Excavated material would be artificial fill and Bay Mud. The proposed haul route would be from Embarcadero to Third St., from Third to Evans and from Evans to Water's Edge. The removal of spoils from the site could cause silt and sand to spill in the streets along haul routes if trucks are not properly loaded. Such street dirt could be a safety hazard to motorists, bicyclists, and pedestrians. It could also be a source of siltation in storm drains and of airborne particulates.

Sheet piling would be used to shore walls of the excavation pit to prevent lateral movement of geologic materials into the pit.

The building would be supported on precast prestressed concrete piles driven into the dense sand and firm clay layers (Posey Formation) approximately 60 to

150 ft. below the site. The depth to the Posey Formation and consequently the thickness of Bay Muds increases from southwest to northeast on the project. The Posey Formation is the uppermost soil layer capable of providing adequate foundation support for the structure./2/ The piles would support the structure by friction with surrounding geologic materials. Minor amounts of settlement may occur after project construction, caused by consolidation of the old bay silts and clays (San Antonio Formation). Pile driving often produces vibrations that can affect surrounding structures.

The Department of Public Works generally requires a surety bond to be posted before issuance of a permit for excavation because of the potentially damaging effects of pile driving, excavation and dewatering (see Hydrology). The construction subcontractor may also be required by the project sponsor to obtain a "Faithful Performance and Payment Bond" from a registered California Surety Company, guaranteeing that the work would be finished and that the owner(s) of existing buildings would be compensated for any damages. In addition, the construction subcontractor may be required to have liability insurance to provide additional protection for the buildings' owner and occupants.

SEISMICITY

The proposed structure would be designed to meet seismic design standards, as specified in the San Francisco Building Code and the 1980 Uniform Building Code. Project engineers would perform static and dynamic structural analyses for the project to ensure optimal structural stability. Groundshaking would be the greatest potential hazard to the structure during an earthquake. The project would incorporate a ductile steel frame, which generally performs well during an earthquake; for major earthquakes (above Richter magnitude 7.0), steel framed structures may suffer damage but would probably not collapse. Bookcases and other unattached objects within the building may fall, and windows may break, showering glass onto streets, sidewalks and adjacent buildings. Falling glass from the project would land on parts of Mission and Main Sts., and their sidewalks. Seismic standards for building cladding are specified in the San Francisco Building Code.

Liquefaction and subsidence would probably not present a hazard during an earthquake because the new structure would rest on piles driven down to stable geologic material. Liquefaction and subsidence may cause surrounding streets to crack and buckle, and water mains, pipes, and underground utility lines to break. Since the project could be left without outside water, power, or telephone communication, emergency water storage and a power generator would be incorporated into the building, as required by City Code. The proposed building would be superior to the existing structures in terms of seismic safety; however, more people would be exposed to potential seismic hazards because more people would be on the site as a result of project development. The City's emergency response plan in case of an earthquake is discussed below.

HYDROLOGY

Dewatering would be required during excavation and construction for a period of about 30 weeks./1/ Dewatering can induce local subsidence in compressible geologic materials (i.e., artificial fill and soft Bay Mud). Walls of older brick and masonry buildings might crack or lean, and floors might be bent or tilted. Streets and sidewalks could develop swales, cracks, or "potholes", thereby creating potential traffic hazards.

Underground utility lines might be bent or broken. Because excavation will average 16 ft. in depth, with a maximum depth of 20 ft., and the groundwater table is approximately 13 ft. below grade, dewatering is expected to be minimal. Since the Bay Mud at the bottom of the excavation is relatively impervious, dewatering within the excavation could be accomplished by sumps and pumps./2/ Water from dewatering operations would be discharged into the storm drain system. Because the amount of water would be small, it is not expected that any major problems would result from dewatering.

The groundwater level is expected to return to normal after excavation. Because the portion of basement would extend below the groundwater level, drains would be installed at the basement level and basement walls and floors would be waterproofed.

Emergency Response Plans

The Mayor's Office of Emergency Services (OES) is preparing an emergency response plan to be implemented in the event of an earthquake or other emergency. The plan will identify roles and responsibilities of government agencies which would be involved in the event of a city emergency. Included in this plan are a series of casualty and mass care centers that have been established on a district basis and would provide first aid and essential social services to injured and displaced persons.

Cumulative highrise development proposed for the downtown area would increase the total number of persons working downtown. This would result in a greater demand for medical care and social services in the area if a disaster were to occur. In addition, street congestion would probably intensify due to the increased number of people concentrated in the Financial District. This would interfere with the prompt response of emergency vehicles due to route delays and detours caused by crowded streets.

The effectiveness of the City's emergency response plan would therefore depend, in part, on an informed public's ability to know what to do and where to go in the event of an emergency.

NOTES - Geology, Seismicity and Hydrology

/1/ William Shuldiner, Manager of Projects, Bechtel International Corporation, letter of August 26, 1982.

/2/ Harding-Lawson Associates, 1981, Soil Investigation, 111 Mission Building, San Francisco, CA.

J. GROWTH INDUCEMENT

PROJECT-RELATED EFFECTS

The project would add about 342,770 gross sq. ft. of office space to the existing supply in downtown San Francisco, and would remove 27,100 sq. ft. of retail and office space that is currently vacant.

Employment at the site would be 1,390 jobs. Potential tenants are unknown, but could include office tenants expanding or relocating from other San Francisco locations and new firms that relocate from outside San Francisco. Therefore, all 1,390 new jobs would not necessarily represent employment that is new to San Francisco. If the building were fully leased, and the availability of its space does not create permanent vacancies in other San Francisco office buildings, total employment in San Francisco would eventually increase directly by about 1,390 jobs due to the project.

Any net increase in downtown employment would increase the demand for retail goods and food services in the area. The project would intensify this demand, by additional demand for retail space. The demand for restaurant space in the area surrounding the project would particularly tend to intensify as a result of the project occupancy.

It is expected that some project workers would desire to live in San Francisco. Employment growth, however, would not correspond directly to increases in demand for housing and City services to residents, because some new jobs would be held by individuals who already live and work in the City, or who live in the City but who previously either did not work or worked outside the City, or by those who would live in surrounding communities that would not desire to move to San Francisco. To the extent that the project increases the number of San Francisco residents, these residents would increase the demand for commercial, social and municipal services. An increased demand for housing in San Francisco may have a tendency to increase City residential rents, and housing sales prices. Its influence on future housing costs cannot be stated conclusively.

The project would be located in an already developed urban area, and would require no new construction, extension or expansion of public services or utilities. New commuters working in the project would create secondary demands on local and regional streets, freeways and transit systems.

CUMULATIVE GROWTH INDUCEMENT EFFECTS

Development of the project would continue the trend toward replacement of older buildings in the financial district with new construction, but would not itself stimulate further office development near the project site, as such development has already taken place or is being planned. The growth of office space in the downtown is in response to the increasing demand for office space in the Financial District. This demand would exist whether or not the proposed project were built.

Increased amounts of available office space in the Financial District would relieve pressure for construction of new office and conversion of existing uses to office space in other areas of the City, particularly South of Market and the northern waterfront. An increase of office space in San Francisco would not appreciably inhibit office development elsewhere in the Bay Area, unless commercial rents in San Francisco decline to rates offered in outlying areas.

At this time, office space construction continues the trend of growth in the service sector, headquarters office and white collar employment in San Francisco. Increases in downtown office space and employment would contribute to continued growth of the local and regional markets for goods and services.

V. MITIGATION MEASURES WHICH WOULD MINIMIZE THE POTENTIAL IMPACTS OF THE PROJECT

In the course of project planning, design and coordination, measures have been identified that would reduce or eliminate potential environmental impacts of the proposed project. Some of these measures have been or would be adopted by the project sponsor or their architects and contractors; some are still under consideration by the project sponsor, and some have been rejected. Those measures not included as part of the project could be required by the City Planning Commission as conditions of project approval.

URBAN DESIGN FACTORS

MEASURES INCLUDED AS PART OF THE PROJECT

- The office tower would represent a transition between taller 43-, 34- and 33-story buildings to the north and northwest and 22- and 19-story and lower buildings to the southeast, in compliance with the height envelope intended by the Urban Design Plan (Objective 3, Policy 5). The bulk of the tower is less than allowable, resulting in a tall, slender form similar in bulk to other recently-constructed and proposed developments.

- The proposed tower would have a series of setbacks at the upper levels to reduce it bulk and to provide a visually interesting outline on the skyline.

- Building corners would be notched to provide articulation of the building's mass.

- Clear glass would be used in all windows of the project which, in combination with the light-colored stone facade, would conform to Urban Design Guideline objectives for light-colored buildings.

- The covered entrance plaza would provide a pedestrian scale.

- The project would provide covered and open landscaped plaza areas and a mid block passage in conformance with Urban Design Element, Objective 4, Policies 4 and 10.

- The pedestrian walkway would be lined by a corridor of trees and street trees would be planted in front of the project to provide a visual amenity.

- The podium section would provide a defined base element; the setback above this section would reduce the tower's bulk.

HISTORIC AND CULTURAL RESOURCES

MEASURE INCLUDED AS PART OF THE PROJECT

- Should evidence of cultural or historic artifacts of significance be found during project excavation, the sponsor would agree: 1) to require the project contractor to notify the Environmenal Reveiw Officer and the President of the Landmarks Preservation Advisory Board; 2) to require that the contractor suspend construction in the area of the discovery for a maximum of four weeks to permit review of the find and, if appropriate, retrieval of artifacts; 3) for an archaeologist or historian or other expert acceptable to the Environmental Review Officer to help the Office of Environmental Review determine the significance of the find and identify feasible measures, if any, to preserve or recover artifacts; and 4) to implement archaeological mitigation measures which would be consistent with Assembly Bill 952.

EMPLOYMENT, HOUSING AND FISCAL FACTORS

MEASURES NOT INCLUDED AS PART OF THE PROJECT

- The project sponsor could contribute funds for maintaining and augmenting public transportation service, in an amount proportionate to the demand created by the project, should such contribution be required by the City.

The project sponsor would make a decision about implementing this measure after a specific amount has been determined. The proposed project would generate property taxes to the General Fund, a portion of which would be used to fund Muni, and, according to a memo from the Director of City Planning, existing Muni capacity could accommodate the demand from currently proposed projects.

- The project sponsor could participate in the City's Office/Housing Production Program (OHPP) to provide the 305 housing unit demand in San Francisco, based on the OHPP formula. The project sponsor has rejected this measure because, in the sponsor's opinion, the OHPP formula is speculative and overestimates the project-related housing demand in San Francisco. The sponsor does not believe that a direct relationship has been established between office development and housing demand. The OHPP formula assumes that 40% of project employees would be San Francisco residents while other studies indicate that this fraction may be 15% to 30%. (See Section IV., Environmental Impacts, p. 65.) The sponsor believes that new San Francisco employment supported by the project would create employment opportunities for unemployed residents and would be an economic benefit that would allow employees to purchase or rent housing in San Francisco. The additional economic burden caused by the housing requirement would make the project economically infeasible and prevent the construction of the project.

TRANSPORTATION

MEASURES INCLUDED AS PART OF THE PROJECT

- The Main St. sidewalk at Mission St. could be bulbed to create additional space for pedestrians. This measure is subject to review and approval by City agencies. The large, open entrance to the tower at the corner of Mission and Main Sts. would also increase the amount of sidewalk space available.

- The project would provide the northern entrance to the mid-block pedestrian walkway connecting Mission and Howard Sts., recommended and

requested by the Department of City Planning to provide shorter pedestrian routes and relieve congestion on public sidewalks.

- To avoid curbside parking of service and delivery vehicles, two van-sized parking spaces would be provided on the first parking level.

- Loading dock and parking access would be provided on Main St. rather than Mission St. so as not to interfere with traffic on Mission St.

- A freight elevator would be provided in proximity to the loading docks to achieve efficient movement of goods and encourage drivers of loading vehicles to use the docks.

- A transportation broker would be located in the project management office. The broker would encourage transit use through the sale of Muni and BART passes to employees. Tenant carpool and vanpool programs would be encouraged by providing a central clearinghouse for carpool and vanpool information.

- Tenant firms would be encouraged to implement a flex-time system for employees to reduce peak period congestion on the transportation system.

MEASURES NOT INCLUDED AS PART OF THE PROJECT

- The general construction contract could require that construction traffic enter or leave the project site before or after the morning peak hour and before or after the afternoon peak hour. A decision on this measure would be made after discussion of feasibility between the sponsor and contractor(s). The measure would be implemented unless it proved to materially increase costs or to interfere with proper construction techniques, such as concrete pours.

- Within a year of project completion, the project sponsor, in consultation with the Department of City Planning and in accordance with Departmental Policy, could conduct a trip generation survey which would be made available to the Department of City Planning. Alternatively, at the

request of the Department of City Planning, an in-lieu fee could be contributed toward an overall survey of the downtown area./2/ The decision on this measure would be made on the basis of the cost of such a survey, the amount of the in-lieu fee requested by the City, willingness of tenants to participate, and the need for such a survey after completion of the Downtown Environmental Impact Report.

- Through flexible use of the parking garage, service vehicles could always be accommodated in the garage even when the two designated spaces are being utilized.

MEASURE WHICH WOULD REQUIRE ACTION BY PUBLIC AGENCIES

- Prior to occupancy of the project, the Bureau of Engineering could increase the width of the north and east crosswalks by five feet or more. The cost would be borne by the City.

AIR QUALITY

MEASURES INCLUDED AS PART OF THE PROJECT

- The project contactor would sprinkle demolition and excavation areas with water at least twice daily. An effective sprinkling program can reduce dust generation by about 50%.

- The project contractor would maintain and operate construction equipment to minimize exhaust emissions.

- Measures discussed in the Transportation Mitigation Section, p. 110, encouraging car/van pools, flex-time and the use of public transit, would result in reduced traffic volumes and automobile emissions in the downtown and Bay Area.

NOISE

MEASURES INCLUDED AS PART OF THE PROJECT

- The project sponsor and project contractor would meet with the Bureau of Engineering to determine necessary and feasible measures to reduce noise during the period that impact tools may be used.

- Piling holes would be predrilled to reduce noise and limit vibrations.

ENERGY

MEASURES INCLUDED AS PART OF THE PROJECT

- The building would be equipped with individual light switches, where feasible, to facilitate energy conservation by occupants.

- The building's air conditioning and ventilation system would circulate a variable volume of air with an economizer cycle to use outside air as possible. This would reduce the need for air conditioning. The system would be controlled throughout the building by a time clock, except in the garage area, where carbon monoxide sensors would be used.

MEASURES NOT INCLUDED AS PART OF THE PROJECT

- An energy audit of the project's actual energy use could be performed after the first year of occupancy and cost-effective alterations to energy use systems identified in the audit could be implemented. This measure has been rejected by the project sponsor because the proposed energy systems are already efficient.

- The ventilation system air intake and exhaust vents could be located at points on the building which would allow predominant air flows around the building to reduce the energy needed to bring in, circulate and exhaust ventilation air. A decision to implement this measure would be made by

the project sponsor after it has been evaluated by the project engineers as to its feasibility and cost effectiveness.

- An active solar water heating system to provide hot water, or, alternatively, the use of "waste" heat from the boiler flue gases to preheat hot water, before it enters the water heater, has been rejected by the project sponsor because neither of the measures appear to be cost effective.

- Double-paned windows were rejected because, while more space heating would be necessary for single-paned windows in the cooler months of the year, the greater heat loss during warmer months would decrease air-conditioning requirements during PG&E's system-wide electrical peaking periods.

- Operable windows were rejected because they would provide little energy benefit over the planned environmental control in the building and could result in inefficient operation of installed environmental control systems.

Load shedding was rejected because no PG&E rate schedule now available would be available for the project when it begins operation. If a rate schedule becomes available in the future, the project could be modified to operate under such a schedule. Installation of controls at a later date would not present a problem.

- Individual metering of office space was rejected because individual tenants would have changing space needs over time and it would not be possible to anticipate these in the designs of the project.

COMMUNITY SERVICES

- To minimize the need for City police services, the project would provide internal security measures. Security guards would screen visitors and monitor entrances to the tower before and after normal working hours.

- The project would incorporate low-flow faucet and toilet fixtures to reduce water consumption and wastewater.

- The building would be equipped with a trash compactor to reduce the volume of solid waste requiring storage and transport.

- An emergency evacuation plan would be developed for the proposed project.

GEOLOGY, SEISMICITY AND HYDROLOGY

MEASURES INCLUDED AS PART OF THE PROJECT

- The contractor would shore up and brace pit walls to insure against lateral movement of soils into the pit during excavation. Underpinning would be used where the excavation extends below the basement level of any adjacent building that is not pile supported.

- Appropriate underpinning and support measures of nearby structures during construction would be implemented.

- During construction, the contractor would sweep streets surrounding the construction site mechanically or by hand to prevent siltation of storm drains and generation of dust. The contractor would also confine construction equipment, maintenance, and refueling activities to locations where petroleum spillage would be contained.

- A geotechnical report has been prepared for the project by a licensed professional engineer; the recommendations of this report for foundation design and site preparation would be followed in construction of the project.

- Nonstructural elements of the building, such as hanging light fixtures, bookcases, ceiling and wall partitions and mechanical equipment, would be attached firmly in a manner to reduce the likelihood of their falling during an earthquake.

- Windows would be installed to minimize the possibility of breakage during an earthquake and to maximize the possibility of glass falling inward, rather than outward.

- If dewatering operations should require more than a minimal amount of pumping, holding tanks would be provided to prevent excess sediments from being discharged into storm drains.

- If necessary, during construction, the project contractor would install groundwater observation wells and instruments, and a licensed professional engineer would monitor water table levels and potential subsidence or settlement, and recharge, if necessary.

VI. SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

This chapter identifies impacts that could not be eliminated or reduced to an insignificant level by mitigation measures included as part of the proposed project, or other mitigation measures that could be implemented, as described in Chapter V, Mitigation Measures, pp. 108-116.

CUMULATIVE OFFICE DEVELOPMENT

The project would provide about 100 long-term attendant parking spaces and could generate a demand for about 300 long-term and 30 short-term spaces, resulting in a projected daily deficit of about 230 spaces. This parking space shortfall would be consistent with the Transportation Element of the Comprehensive Plan, which discourages new long-term parking in the downtown area. However, a major parking deficit from cumulative development would create increased transit ridership, increased cruising traffic in the general area as people look for spaces, and increased inconvenience as they take more time searching for parking spaces and travel greater distances between their vehicles and their final destinations.

The project would be part of a trend of denser development in downtown San Francisco. Cumulative increases in the amount of office space would continue regional growth in service-sector and office headquarters activities and employment. The project would contribute to cumulative traffic increases downtown and cumulative increases in passenger loadings on BART, Muni and other transit agencies.

VII. ALTERNATIVES TO THE PROPOSED PROJECT

The alternatives presented here could be approved by decision-makers, instead of the project, if a determination were made that an alternative were more appropriate for the site than the project.

1. NO PROJECT

This alternative would entail no physical change to the project site as it now exists. The three buildings which occupy the project site would remain, presumably in substantially the same condition that currently exist in 1982. (See Section III, pp. 17-22, for a discussion of the existing conditions.) The seismic safety of the buildings on the site would continue to pose a hazard to the extent that they do not comply with current codes.

In general, the environmental characteristics of this alternative would remain substantially as described in the Setting Section of this report. With no project, existing structures on the site would be retained in their present condition and present impacts as described in the Setting chapter. None of the effects identified in Section IV, pp. 46-107, would occur. This alternative would leave the site open to future development proposals. As the existing buildings cover almost 100% of the parcels, there would be no opportunity to extend an interior block walkway through the site.

The sponsor has rejected this alternative because it would not increase site revenue to the sponsor or the City, represents an inefficient use of scarce downtown land, and would not provide an increase in jobs.

2. NO PARKING ON SITE

Under this alternative, no on-site parking would be provided. This building could be about 26 ft. shorter because the two parking levels would be eliminated. The 70-ft. curb cut would not be shortened because the ramp area

would be used to accommodate van parking now proposed for the first parking level. Shadow lengths could be shortened about 7%; except for slightly shorter shadows on Mission St. in summer at noon, the decrease would not be noticeable. A reduction in height would decrease the project's visibility and its role as a transitional element. However, the height of the ground floor ceiling would not be limited by the parking ramp slope and could be increased, allowing an increase in the height of the arcade. The height of the bulding would then depend on the amount, if the sponsor so chose, of the increase.

This alternative would not increase the area parking supply by the 100 spaces proposed for the project. Reductions in vehicle congestion in the immediate area could occur, accompanied by decreases in emissions at the site, fewer pedestrian and vehicular conflicts from autos using the garage and increased transit demand of similar magnitude. These effects, except for transit demand, would be site-specific. If the lack of parking resulted in drivers "cruising" in search of parking spaces, vehicle emissions would occur wherever drivers expected to find parking; such a change would not be quantifiable. This effect could take place in the project vicinity or in an area where drivers assumed parking to be available. While the increment of change in these impact areas attributable to development of this alternative would be small, if enacted city-wide, the cumulative effect of this alternative would be substantial. Lack of on-site parking could limit handicapped access and discourage the establishment of car and vanpools.

The sponsor has rejected this alternative because, in the sponsor's opinion, on-site parking is needed to meet the parking demand by building tenants. On-site parking would improve the marketability of the building.

ALTERNATIVES CONFORMING TO GUIDING DOWNTOWN DEVELOPMENT

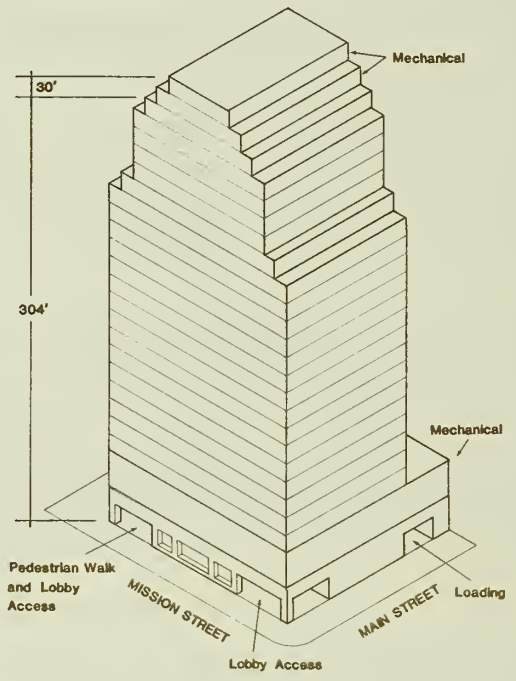
Alternatives 3A and 3B would be consistent with proposals described in Guiding Downtown Development (GDD), July 1982, a study prepared by the Department of City Planning. The City Planning Commission, in Resolution 8592, June 21, 1981, requested that EIRs include alternatives conforming to GDD as a means of providing information and practical analysis of the effects of proposals described in GDD. GDD contains a series of regulatory proposals amending the

current zoning contols in downtown San Francisco affecting size, design, use and location of major buildings. The report proposes changes in the City Planning Code regulations for the C-3 Use Districts pertaining to FAR, height and bulk, parking, loading, housing, open space and historic preservation. GDD is still under review by Planning Department staff, and the two following alternatives provide information relevant to the review.

3A. GUIDING DOWNTOWN DEVELOPMENT - OFFICE USE

GDD would reduce the allowable FAR on the site to 12:1 (from 14:1) for office, and the height limit to 300 ft. (from 400 ft.). However, additional height is available as a conditional use for sites meeting certain criteria: the site is within 250 ft. of a higher height district, and the new building fits within a prescribed slope envelope (GDD, p. A-3). These provisions would allow a height of 350 ft. for this alternative, subject to conditional use approval.

This alternative would be a 23-story building, including two mechanical levels. Under this alternative, office floor area would be reduced to 295,550 sq. ft. from the 342,770 sq. ft. proposed for the project; lobby space on the ground floor would be 6,940 sq. ft. for a total of 302,490 sq. ft. (see Figure 28, opposite). The maximum allowable base floor area would be about 302,500 sq. ft. under GDD. The height of the building would be 324 ft., 26 ft. less than the maximum recommended under GDD. This alternative would provide 13,500 sq. ft. of recreational open space: 9,000 sq. ft. in the



SOURCE: Skidmore, Owings & Merrill

FIGURE 28: ALTERNATIVE 3A- GUIDING DOWNTOWN DEVELOPMENT - OFFICE

pedestrian passage and 4,500 sq. ft. in the sidewalk arcade (covered open entrance plaza) of the building. This area would meet the GDD requirement of one sq. ft. of open space for each 25 gross sq. ft. of new building area. The building would contain artwork on the ground floor equal to 1% of the building cost, as recommended in GDD. No parking would be provided under this alternative because the site is located in Parking District 1, where parking as an accessory use would be prohibited (except for dwelling units). Three loading docks, accessible from Main St., would be provided. The curb cut would be about 12 ft. wider than that of the project.

GDD limits the maximum base dimension to 200 ft., and the area of the top floor to a maximum of 8,100 sq. ft. GDD bulk recommendations result in stepped buildings whose dimensions depend on the height zone in which the building sites are located. The base of this alternative would measure 137.5 ft. (Main St. dimension) by 150 ft. (Mission St. dimension). The building would step in about 40 ft. from the southerly property line above the second floor mechanical level; floors 3 through 17 (the mid tower zone) would contain about 15,000 sq. ft. each. The 18th floor would step in on the east and west sides and would have a floor area of 14,300 sq. ft. Floors 19 through 22 (upper tower zone) would step in again, with areas of 11,200 sq. ft. each. The top floor would contain 8,100 sq. ft. The two-story roof-top mechanical level would also be stepped to conform to GDD's recommendations for "interesting roofs." The mechanical floor would be about 30 ft. high, for a total building height of 345 ft. (The additional 4 ft. of height in mechanical space would be exempt from height limitations.)

About 1,185 persons would be employed under this alternative, 200 less than in the proposed project. Revenues to the General Fund would be less, as would be service demands. Impacts on public transit systems from this alternative would be about 14% less than with the project. Traffic generation would be about 14% less; short-term parking demand would be for 30 spaces, the same as the project. Long-term parking demand would be for 290 spaces, 10 less than the project. Because no parking would be provided on-site, some effects would be similar to Alternative 2, such an increase in the parking deficit, although reduced since the total floor area, and thus occupancy and parking demand, would be less. According to the housing formula contained in GDD (640 sq. ft.

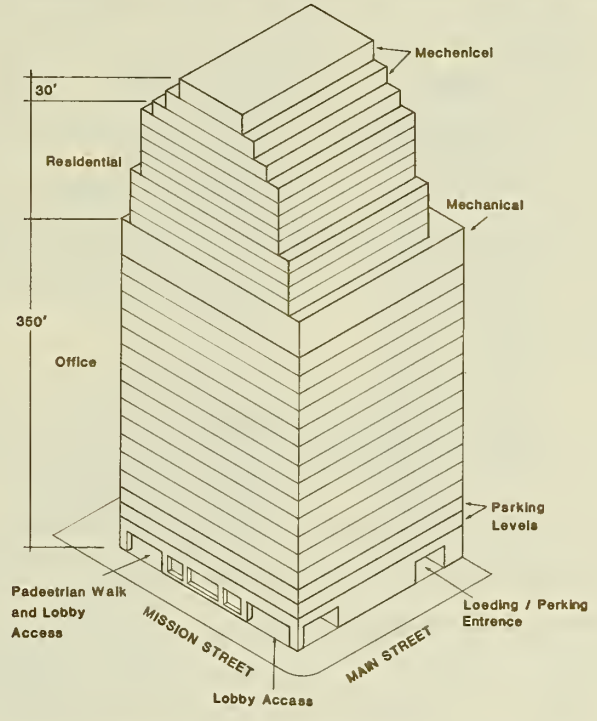
and 0.9 units of housing per 1,000 sq. ft. of office space), the housing requirement would be 191,552 sq. ft. in 269 units, all of which would be provided off-site (see Alternative 3B for a combined office/housing alternative under GDD). Shadow lengths would be about 13% shorter than project shadows, resulting in slightly less shadowing of Mission St. during the noon hour in summer months.

This alternative has been rejected by the project sponsor because it does not meet the objective of providing the maximum amount of office space legally permitted under the current code; because the proposed project addresses many of the concerns of GDD (including provision of open space, and a stepped roof; because the project complies with the Urban Design Element of the Comprehensive Plan; because the bulk limits preclude the development of the large floor areas contained in the podium levels of the proposed project, considered by the sponsor to be necessary to meet existing demand for this type of space; because parking area, considered by the sponsor to be necessary for project tenants, would not be permitted; and because the reduction in height would contribute to a "benched" appearance in combination with the proposed 340-ft. 135 Main St. project and would not provide a strong transitional element, as at present.

3B. GUIDING DOWNTOWN DEVELOPMENT - MIXED USE

GDD would allow an additional FAR of 5:1 for housing above the proposed 12:1 for the site for a total allowable floor area of 428,536 sq. ft. This alternative would be a 350-ft. tall, 29-story building, including two parking levels and two mechanical levels. Under this alternative, the building would contain 154 housing units in 150,570 sq. ft. on the 11 upper floors, and 267,800 sq. ft. of office space (about 75,000 sq. ft. less than the proposed project) on floors 4 through 13. Parking for 100 cars (for residential use only) would be located on floors 2 and 3. Mechanical space would be located on the 17th and roof levels. The total area of the building would be 428,500 sq. ft. Loading provisions would be the same as proposed for the project: two loading docks located on the ground floor and two van loading spaces on the first parking level at the top of the ramp. The building would be stepped at the 18th, 22nd, and top three levels to conform to GDD bulk limit

recommendations (see Figure 29, this page). Open space recommendations would be met through the provision of balconies for the residences and the pedestrian passage and sidewalk arcade for the office uses.



SOURCE: Skidmore, Owings & Merrill

FIGURE 29: ALTERNATIVE 3B- GUIDING DOWNTOWN DEVELOPMENT - MIXED USE

About 1,090 people would be employed on-site under this alternative, about 300 less than in the proposed project. Revenues and costs to the City could be reduced. Some reversal in the flow of peak hour traffic would occur under this alternative, because residential traffic would be in the opposite direction to commute traffic. Parking demand would be for 30 short-term spaces and 300 long-term spaces. Under this alternative, none of this demand would be met on site. Peak hour impacts on Muni could be increased over the project, but split differently, as dwellers in site residences rode downtown lines to the site from places of work and office employees rode downtown lines away from the site. Total energy consumption would be greater under this alternative; peak use would occur later in the day. Noise from the freeway could affect project residences.

Retail spaces in the vicinity of the site cater largely to office workers, because they form the largest existing market. With development of uses proposed in the Rincon Point-South Beach Redevelopment Plan, including parks, housing, offices and hotels, and if other proposed developments in the vicinity were to include housing and recreational amenities, neighborhood serving businesses would probably be attracted to the area. Willingess of developers to provide on-site housing would depend on the developers'

assessment of the existing and future market for the housing, in the absence of requirements that they do so, or incentives which offset perceived market disincentives.

The sponsor has rejected this alternative because the site is considered undesirable for residential use because of potential noise impacts, the current lack of residential uses in the area, the lack of residential services such as supermarkets, and because the housing prices necessary to cover costs of construction of residential space in an area competing with higher office rents would be prohibitive to many prospective homeowners. Additionally, in the opinion of the sponsor, residential use is not the highest and best use of the site.

4. PREVIOUS (1981) PROPOSAL FOR THE SITE

In 1981, the project sponsor presented a design for the site containing 352,900 gross sq. ft., including 341,570 sq. ft. of office (1,200 sq. ft. less than the proposed project), 4,720 sq. ft. of retail on the ground floor of the office tower and in a one-story retail building which was proposed for the eastern portion of the site. This design was subsequently withdrawn and replaced by the existing proposal.

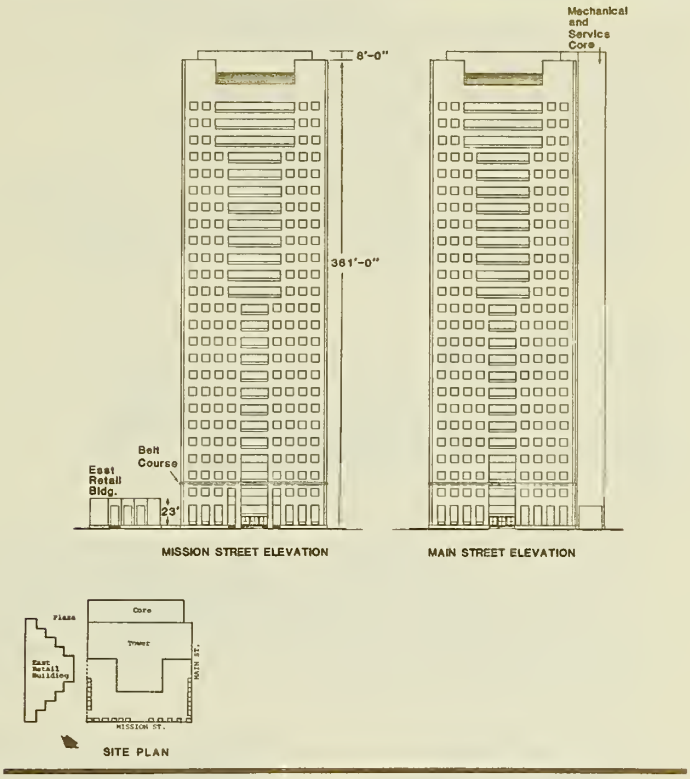
This alternative would have two subsurface levels of parking with 46 spaces, and three loading spaces would be located in the basement parking level. A two-way ramp would lead to the basement, accessible from Main St. via a 23-ft. curb cut.

This 26-story alternative would be 369 ft. tall, including the roof-top mechanical penthouse (see Figure 30, p. 125). This alternative would have an open plaza surrounding the east retail building which would allow access to the mid-block pedestrian passage. The office tower entrance would be through a ground floor covered court, as with the project. The tower would be 114 ft. by 114 ft., and would be slimmer than the project as proposed. Typical floor areas would be 14,400 sq. ft., 6,400 sq. ft. less than proposed podium levels and 600 sq. ft. less than typical tower floors in the proposed project. This

alternative would provide 1,400 jobs, 10 more than the project. Housing demand would be for 146 to 293 units.

Traffic generation, transit, energy, air quality and other impacts of this alternative would be similar to those of the proposed project. Shadow lengths would be reduced about 8%. The tower would be slimmer but would provide less stepping at upper levels. Less parking demand would be satisfied on site than with the proposed project. The underground parking levels would require more extensive excavation and dewatering than the project.

This alternative would provide ground-floor retail space, and greater height in the roof of the arcade than the project.



SOURCE: Skidmore, Owings & Merrill

FIGURE 30: ALTERNATIVE 4- PREVIOUS (1981) PROPOSAL FOR THE SITE

The sponsor has rejected this alternative because it would not, in the sponsor's opinion, be the best use of the site and would not provide the larger floor sizes that San Francisco firms require for operational and functional reasons if they are to remain in San Francisco. The project sponsor plans to lease the space to companies in need of larger floor sizes. The proposed project provides a variety of floor sizes that would meet the needs of San Francisco businesses, in addition to complying with the City's urban design policies. The sponsor also rejects this alternative because the additional excavation, shoring and dewatering required under this proposal would increase the costs of development.

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X. APPENDICES

LIST OF APPENDICES

APPENDIX A: CUMULATIVE DOWNTOWN DEVELOPMENT

TABLE A-1: MAJOR OFFICE BUILDING CONSTRUCTION IN SAN FRANCISCO THROUGH 1981, IN GROSS SQUARE FEET

Year	Total Gross Sq. Ft. Completed	5-Year Total	5-Year Annual Average	Cumulative Total of All Office Buildings	Cumulative Total of All Downtown Office Buildings
Pre-1960		(Net)(a)	(Net)(a)	28,145,000(b)	24,175,000(c)
1960	1,183,000				
1961	270,000				
1962	--				
1963	--				
1964	1,413,000				
		2,866,000	573,200		
1960-1964		(2,580,000)	(516,000)	30,725,000	26,754,000
1965	1,463,000				
1966	973,000				
1967	1,453,000				
1968	1,234,000				
1969	3,256,000				
		8,379,000	1,675,800		
1965-1969		(7,541,000)	(1,508,000)	38,266,000	34,295,000
1970	1,853,000				
1971	--				
1972	1,961,000				
1973	2,736,000				
1974	2,065,000				
		8,615,000	1,723,000		
1970-1974		(7,753,000)	(1,550,000)	46,019,000	42,048,000
1975	536,000				
1976	2,429,000				
1977	2,660,000				
1978	--				
1979	2,532,000				
		8,157,000	1,631,400		
1975-1979		(7,341,000)	(1,468,000)	53,360,000	49,389,000
1980	1,284,000				
1981	3,029,000				
		4,313,000(d)	2,156,500(d)		
1980-81		(3,881,700)(d)	(1,940,850)(d)	57,241,700	53,270,700

TABLE A-1: MAJOR OFFICE BUILDING CONSTRUCTION IN SAN FRANCISCO THROUGH 1981, IN GROSS SQUARE FEET (Continued)

(a) Net equals 90% of gross. Net new space is added at an increase factor of 90%, since it is assumed that space equal to 10% of a new building is demolished to make land available for the new replacement building.
(b) Source: San Francisco Downtown Zoning Study, Working Paper No. 1, January 1966, Appendix Table 1, Part 1. For pre-1965, data include the area bounded by Vallejo, Franklin, Central Skyway, Bryant and Embarcadero. Also includes one-third of retail-office mixed use. For post-1964, data include the entire city.
(c) Gross Floor Space for downtown offices are included for the following functional areas: Financial, Retail, Hotel, Jackson Square, Golden Gateway, Civic Center, South of Market, and Outer Market Street as defined in the cited January 1966 report. For post-1964, the entire area east of Franklin Street is included.
(d) Two-year total and average.

SOURCE: Department of City Planning, August 1, 1982.

TABLE A-2: CUMULATIVE OFFICE DEVELOPMENT IN DOWNTOWN SAN FRANCISCO AS OF JANUARY 27, 1983

Downtown Office Projects Under Formal Review

Block No.	Case No.	Project Name	Office (Gross Sq. Ft.) Total New Area	Office (Gross Sq. Ft.) Net New Area	Retail (Gross Sq. Ft.) Total New Area	Retail (Gross Sq. Ft.) Net New Area
110	82.129E	Embarcadero Terraces	142,000	142,000	3,000	3,000
112	81.258	Ice House (C)	209,000	209,000	0	0
113	82.418E	1171 Sansome	30,000	30,000	0	0
136	81.245	955 Front at Green	50,000	50,000	0	0
176	81.673EACV	Columbus/Pacific Savoy	49,000	49,000	22,000	22,000
176	82.368ED	900 Kearny	25,000	25,000	5,000	5,000
228	81.610ED	569 Sacramento (C)	19,000	19,000	0	0
269	81.132ED	Russ Tower Addition	392,900	392,900	13,000	13,000
288	81.687ED	222 Kearny/Sutter	269,400	202,400	10,000	-8,400
331	81.448E	Mixed Use Development	218,600	207,600	44,700	19,700
669	81.667ED	1361 Bush (C)	45,720	45,720	0	0
716	81.581ED	Polk/O'Farrell	61,600	61,600	22,400	22,400
814	31.540E	101 Hayes	126,000	126,000	6,000	6,000
816	82.212E	300-350 Gough (C)	16,000	16,000	0	0
834	82.603E	25 Van Ness (Addition)	42,000	42,000	0	0
3702	81.549ED	1145 Market	137,000	108,500	8,000	8,000
3707	81.245C	New Montgomery Pl.	231,500	217,400	2,200	-3,900
3708	81.493ED	71 Stevenson	324,600	324,600	6,200	6,200
3717	81.183E	123 Mission	342,800	342,800	0	0
3733	82.29E	832 Folsom	50,000	50,000	0	0
3750	82.241E	600 2nd at Harrison	228,000	228,000	10,000	10,000
3750	82.77E	642 Harrison (C)	54,400	45,900	0	0
3760	81.386	401 6th	7,000	7,000	0	0
3763	82.384E	400 2nd at Harrison (C)	71,500	49,500	0	0
3778	81.630ED	548 5th/Brannan	250,000	250,000	0	0
3786	82.33E	655 5th/Townsend	126,250	126,250	0	0
3788	82.352EV	640 2nd	39,100	37,400	0	0
3789	82.31EV	615 2nd/Brannan (C)	106,000	106,000	0	0
9900	81.63	Ferry Building Rehab	308,000	96,000	150,000	124,000
TOTAL UNDER FORMAL REVIEW			3,972,870	3,607,570	302,500	227,000

Approved Downtown Office Projects

58	82.234ED	Roundhouse	45,000	45,000	3,000	3,000
141		100 Broadway	13,000	13,000	0	0
143		1000 Montgomery (C)	39,000	39,000	0	0
161	80.191	Mirawa Center	36,000	36,000	30,650	30,650
164	81.631D	847 Sansome	23,750	23,750	0	0

(continued)

Approved Downtown Office Projects (continued)

Block No.	Case No.	Project Name	Office (Gross Sq. Ft.) Total New Area	Office (Gross Sq. Ft.) Net New Area	Retail (Gross Sq. Ft.) Total New Area	Retail (Gross Sq. Ft.) Net New Area
164	81.573D	50 Osgood Place	22,500	22,500	9,100	9,100
166	80.15	750 Battery	105,400	105,400	12,800	12,800
240	81.705ED	580 California	329,500	260,000	6,500	6,500
261	81.249ECQ	333 California	640,000	466,500	15,500	15,500
262	81.206D	130 Battery	41,000	41,000	0	0
265	81.195ED	388 Market	234,500	85,500	10,000	-8,500
267	81.241D	160 Sansome	2,200	2,200	0	0
268	81.422D	250 Montgomery at Pine	105,700	65,700	8,000	8,000
270	81.175ED	466 Bush	86,700	86,700	7,800	2,200
271		582 Bush	18,900	18,900	0	0
288	81.461ED	333 Bush	498,400	458,100	20,900	20,900
294	82.870	44 Campton Place	7,600	7,600	0	0
311	82.120D	S.F. Federal	246,800	218,850	1,600	-9,440
834		25 Van Ness (C)	101,600	101,600	36,400	36,400
3512	82.14	Van Ness Plaza	170,000	170,000	6,000	6,000
3518	81.483V	291 10th St.	25,700	25,700	0	-25,700
3705	80.315	Pacific III Apparel Mart	332,400	332,400	0	0
3707	81.492ED	90 New Montgomery	124,300	124,300	3,350	3,350
3709	81.113ED	Central Plaza	353,100	136,300	17,400	17,400
3715	82.16EC	121 Steuart	33,200	33,200	0	0
3722	81.417ED	144 Second at Minna	30,000	30,000	0	0
3724	81.102E	Holland Ct. (C)	27,850	27,850	0	0
3729	82.860	774 Tehama	5,800	5,800	0	0
3732	81.548DE	466 Clementina (C)	15,150	15,150	0	0
3733	81.2	868 Folsom	65,000	65,000	0	0
3735	80.106	95 Hawthorne (C)	61,900	61,900	0	0
3738	DR85	315 Howard	294,000	294,000	3,200	3,200
3741	82.203C	201 Spear	229,000	229,000	5,200	5,200
3749	81.18	Marathon - 2nd & Folsom	681,700	681,700	39,300	39,300
3752	77-220	Office Bldg. (YBC SB-1)	11,000	11,000	0	0
3763	81.287V	490 2nd at Bryant (C)	40,000	40,000	0	0
3763	81.381	480 2nd at Stillman (C)	35,000	35,000	0	0
3775	81.147V	338-340 Brannan (C)	36,000	36,000	0	0
3776	81.59	Welsh Commons	55,600	55,600	12,000	12,000
3776	81.693EV	539 Bryant/Zoe	63,000	63,000	0	0
3787	81.306	252 Townsend at Lusk	81,900	81,900	0	0
3788	81.296Z	690 2nd/Townsend (C)	16,600	16,600	16,000	16,000
3789	81.552EV	625 2nd/Townsend (C)	157,000	157,000	0	0
3794	81.569EV	123 Townsend	104,000	49,500	0	0
3794		155 Townsend	19,000	19,000	0	0
3803	81.244D	China Basin Expansion	196,000	196,000	0	0
TOTAL APPROVED			5,861,750	5,090,200	264,700	203,860

(continued)

Downtown Office Projects Under Construction

Block No.	Case No.	Project Name	Office (Gross Sq. Ft.) Total New Area	Office (Gross Sq. Ft.) Net New Area	Retail (Gross Sq. Ft.) Total New Area	Retail (Gross Sq. Ft.) Net New Area
106	81.415ED	1299 Sansome	41,000	41,000	3,500	3,500
227	80.296	Bank of Canton	230,500	177,500	0	-800
163	81.1	901 Montgomery	63,000	63,000	18,800	18,800
164	81.251D	936 Montgomery-(disco)	21,500	11,500	0	0
166	CU81.7	222 Pacific (C)	142,000	142,000	0	0
167		Golden Gateway III	103,000	103,000	0	0
196		736 Montgomery	40,000	40,000	0	0
196	CU79.49	Pacific Lumber Co.	92,000	92,000	0	0
206	81.165D	401 Washington/Battery	13,200	13,200	1,800	1,800
208	81.104EDC	Washington/Montgomery	235,000	233,300	4,000	-1,200
237	DR80.6	353 Sacramento	277,000	251,000	8,300	-2,000
239	DR80.1	456 Montgomery	160,550	160,550	24,250	24,250
240	DR80.16	550 Kearny	71,400	71,400	0	0
263	CU79.12	101 California	1,265,000	1,257,000	24,700	-14,300
271	81.517	453 Grant	27,500	27,500	6,200	6,200
287	81.550D	Sloane Building (C)	125,300	125,300	30,000	30,000
288	DR80.24	101 Montgomery	264,000	234,000	5,900	-14,100
289	81.308D	One Sansome	603,000	603,000	7,000	7,000
292	DR79.13	Crocker National Bank	676,000	495,000	86,000	54,000
312	79.370	50 Grant	90,000	90,000	0	0
351	79.133	U.N. Plaza	92,050	92,050	0	0
351	DR79.24	Mardikian/1170 Market	40,000	40,000	0	0
672		Wealth Investments	104,500	104,500	0	0
738		One Flynn Center	25,000	25,000	0	0
762		Opera Plaza	50,000	50,000	0	0
3702	81.25	1155 Market	138,700	138,700	8,800	8,800
3708	80.34	25 Jessie/Ecker Square	111,000	111,000	0	0
3709	80.36	Five Fremont Center	791,200	722,200	35,000	17,300
3712	79.11	Federal Reserve Bank	640,000	640,000	0	0
3715		141 Steuart	80,000	80,000	0	0
3717	79.236	101 Mission (100 Spear)	219,350	219,350	0	0
3717	80.349	Spear/Main (160 Spear)	279,000	279,000	7,600	7,600
3717		150 Spear	330,000	330,000	0	0
3717	82.82D	135 Main	260,000	260,000	4,000	4,000
3718	78.61	Pacific Gateway	540,000	540,000	7,500	7,500
3724		Yerba Buena West	335,000	335,000	0	0
3735		Convention Plaza	339,000	339,000	0	0
3735		Planter's Hotel (C)	20,000	20,000	0	0
TOTAL UNDER CONSTRUCTION			8,935,750	8,557,050	283,350	158,350
GRAND TOTAL (ALL PROJECTS)			18,770,370	17,254,820	850,050	570,310

* (C) - Conversion (generally industrial and/or warehouse to office)
SOURCE: Department of City Planning.

APPENDIX B: WIND TUNNEL STUDY

I. MODEL AND WIND-TUNNEL FACILITIES

Model

A 1:50 scale model of the downtown San Francisco area bounded by Market St. on the north, Folsom St. on the south, Embarcadero Skyway on the east, and Fremont St. on the west was tested in an environmental wind tunnel for existing and proposed conditions.

Wind-Tunnel Facilities

The University of California at Davis environmental wind tunnel was built for testing natural atmospheric boundary layer flows past surface objects such as buildings and other structures. The tunnel has an overall length of 72 ft., a test section of 4 ft. wide by 6 ft. high and has an adjustable false ceiling. Wind speeds within the tunnel can be varied from 1 to 4 m/s (4.8 to 19.3 mph).

The atmospheric boundary layer flow over the downtown area was simulated by an upwind network of turbulence generators. The wind tunnel's false ceiling was adjusted to provide a zero-pressure-gradient downstream flow. The adjustment of the flow to zero-pressure-gradient flow is known to properly model atmospheric boundary layers near the surface of the earth. The long flow development allows a naturally turbulent boundary layer to develop and properly models the full-scale flow.

II. TESTING PROCEDURE

The wind study was divided into two parts: flow visualization and wind-speed measurements. The flow visualization observations were performed by injecting a continuous stream of smoke at various surface locations. The subsequent motion of the smoke was recorded and prevailing wind directions determined. Wind-speed measurements were made at fourteen strategic surface locations using a hot-wire anemometer, an instrument that directly relates rates of heat transfer by electronic signals. The hot-wire signals are proportional to the magnitude and steadiness of the wind. Both the mean wind speeds and corresponding turbulent intensities (rms) were measured. Thus high wind speeds and intense gustiness could be detected. Hot-wire measurements made close to the surface have an inherent uncertainty of $\pm$5% of the true values.

Calibration measurements were made before and after each series of hot-wire experiments. The calibration was accomplished by means of a Thermo-System Incorporated (TSI) Model #1126 hot-wire anemometer calibrator especially designed for low wind speeds. The calibration is accurate to $\pm$1%. The flow above the model was adjusted to the same wind speed of 11.5 ft/sec or 7.81 mph for all experiments. The ratio of near surface speed to freestream wind speed was calculated from the hot-wire measurements and is presented on the attached figures.

Experiments were performed for two prevailing wind directions (west and northwest) for the existing and proposed settings. All hot-wire measurements were taken at the same series of surface points around the building site for both wind directions and the two building settings.

III. TEST RESULTS AND DISCUSSION

The measured wind speeds are expressed as a normalized percentage of the freestream wind tunnel speed where 1.0 represents a wind speed equal to 100% of the freestream value. The numerical ratios displayed on the figures can be approximately interpreted by using the following scale presented in Table B-1. The assessment of wind impact on the surrounding settings is preliminary and should be construed only as an estimate to the projected actual wind environment. The scale presented in Table B-1 is subjective.

TABLE B-1: RELATIVE INTENSITY OF SURFACE WINDS

Intensity of Wind Speed	Percentage of Freestream Speed
Low	0.00 - 0.19
Moderately low	0.20 - 0.29
Moderate	0.30 - 0.49
Moderately high	0.50 - 0.69
High	0.70 - 1.00
Very high	over 1.00

It should be noted that the plotted values are not actual wind speeds but ratios. Thus a point having "very high" wind speed could still experience light winds on a near-calm day. Likewise, a point found to have "low" wind speed could experience significant winds on an extremely windy day.

Northwest Wind

(i) Existing Setting. Existing wind speeds at the existing setting are generally classified moderately low, varying in the measured speed ratios from 0.13 to 0.33 except at the intersection of Beale and Mission Sts. which has a speed ratio of 0.40. Strong vertical vortices are formed off the north and south edges of the PG&E building. The vortices create unsteady and gusty winds at the intersection of Main and Mission Sts., although the magnitude of the wind remains moderately low. The wind flow along Main St. (from north to south) is low (less than 0.19). There is wind flow (from west to east) midway along the project block. There is mild unsteady and gusty winds at the intersection of Spear and Howard Sts.

(ii) Impact of project. The presence of the project and other new developments would cause changes in the wind environment near the site in the following manner: (a) Due to the presence of additional buildings in the PS there is no flow through the project block; (b) The strong vertical vortices shed off the PG&E building are substantially reduced; (c) The unsteady and

gusty wind flow at the intersection of Spear and Howard Sts. is minimized; (d) The general flow would be less gusty than at present probably due to the reduction in the strength of the vertical vortices already mentioned; (e) One unfavorable effect is the increased wind flow along Mission St. between Spear and Stewart Sts. (approximately a 50% increase), but still it is classified as moderately low.

West Wind

(i) Existing Setting. Existing wind speeds are generally classified low to moderately low. Strong vertical vortices are formed off the north and south edges of the PG&E building. There are higher levels of turbulent winds than exist near the surrounding terrain on Mission St. at the intersection of Beale St. and midway between Spear and Stewart Sts., which also have the maximum values of wind speeds (0.44 and 0.40, respectively). There is unsteady and gusty winds at the west corner of Spear and Howard Sts. Steady wind flow passes midway through the project block. All other measured wind flow features are not undesirable.

(ii) Impact of project. The presence of the project and other new development would cause changes in the wind flow near the site in the following manner: (a) the wind speeds and unsteadiness of the flow on Mission St. at the intersection of Beale St. and midway between Spear and Stewart Sts. are slightly reduced, approximately 5% and 16% respectively; (b) due to the presence of the 160 Spear St. building, the east/west wind flow through the block is eliminated; (c) the strong vertical vortices shed off the north and south edges of the PG&E building are substantially reduced (this result is definitely favorable and is probably due to the presence of the Pacific Gateway building); (d) the unsteady and gusty wind at the west corner of Spear and Howard Sts. is greatly reduced, approximately one-half as gusty with the same value of wind speed (about 0.3); (e) the existing southerly-flowing wind along Main St. is reversed to flow to the north along Main St. The values of the ratios remain approximately the same as at present except at the south edge of the proposed building, where the wind speed is more than double than at present, although it is still moderate. This seems to be the only unfavorable wind change. The remainder of the flow environment is essentially the same as that of the existing setting.

Donald Ballanti
Certified Consulting Meteorologist

1424 Scott Street
El Cerrito, Ca. 94530
(415) 234-6087

September 6, 1982
Avril Tolley
Environmental Science Associates
1390 Market Street
San Francisco, CA 94102

SUBJECT: Mission-Main Project Wind Impacts

Dear Ms. Tolley:

At your request I have undertaken a review of design modifications that have occurred for the subject project since the completion of wind tunnel tests on the project. The purpose of this review was to estimate the difference in wind impacts resulting from the design changes, and make a recommendation concerning the applicability of the earlier wind tunnel results to the revised project.

The major design change is the replacement of the square tower with a rectangular tower, its long axis parallel to Mission Street. The area of the Main Street facade would be reduced by about 5%.

This reduction, and the addition of a setback at the southeast side of the building will reduce the impact of the structure along Main Street during westerly winds. The magnitude of the change, however, would probably not be measurable.

For northwest winds, the original design was found to increase winds at certain locations along Mission Street by up to 50%. The new design would increase the area of the Mission Street facade by about 30%. If the impact of the structure is proportional to the area of this face, the impact of the new design would be 30% higher, or a maximum increase of 65% rather than 50%. The wind would still be considered "moderately low", however.

In summary, the proposed design changes would probably not change the impacts found along Main Street. The new design would increase impacts along Mission Street by about 30%. However, because existing winds are low at this location, the projected 65% increase in winds would not raise windspeed ratios above the "moderately low" level.

The earlier wind tunnel tests are generally valid for the new design. Because of the relatively low windspeed ratios measured near the site, additional wind tunnel tests of the new design do not appear necessary.

I hope this information is useful. Please call if I can assist further.

Sincerely,

Donald Ballanti

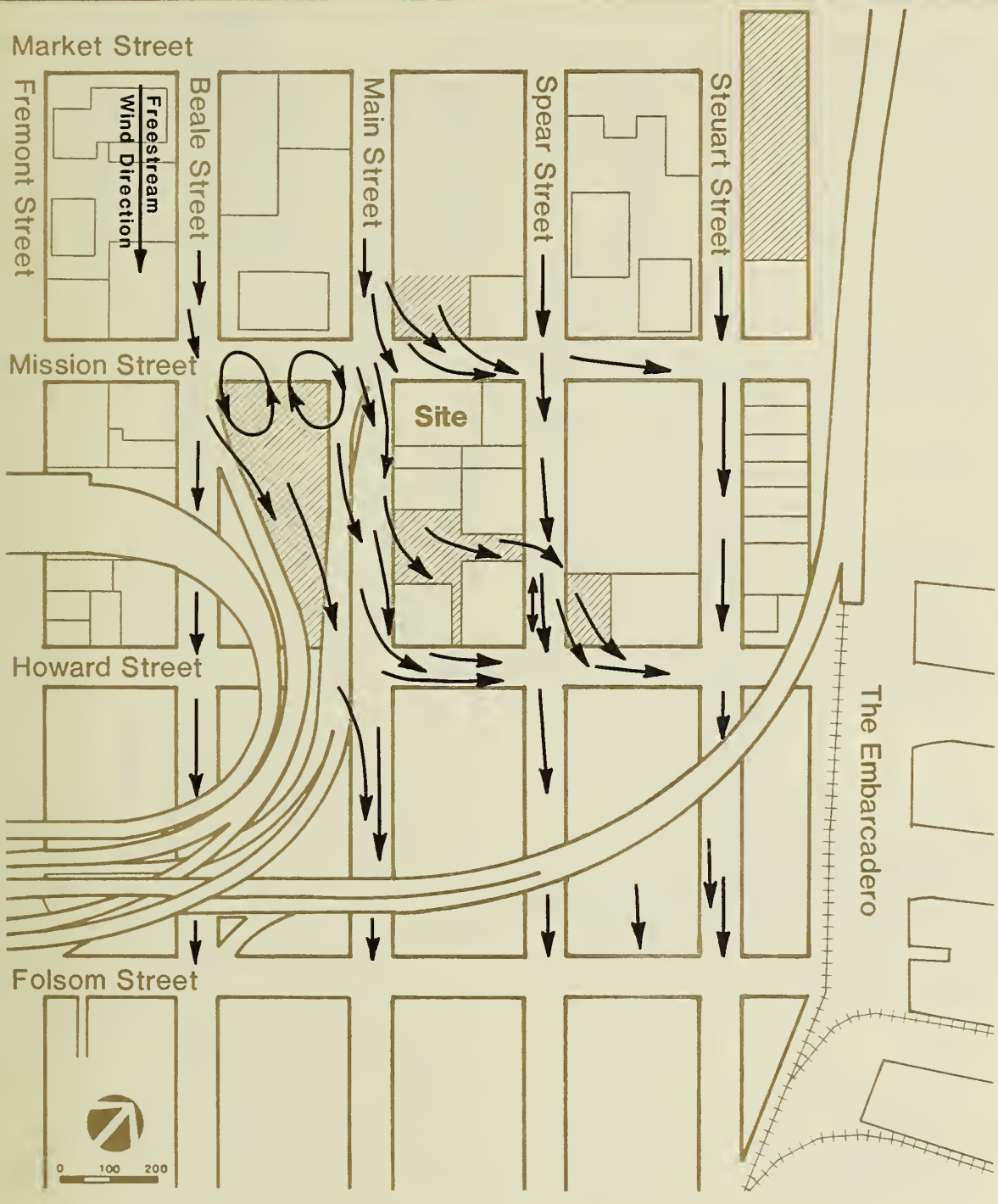
Donald Ballanti
Certified Consulting Meteorologist

Open Space

① Measurement Locations on Sidewalks in Front of Building Lots

FIGURE B-1: LOCATION OF HOT-WIRE ANEMOMETER MEASUREMENTS

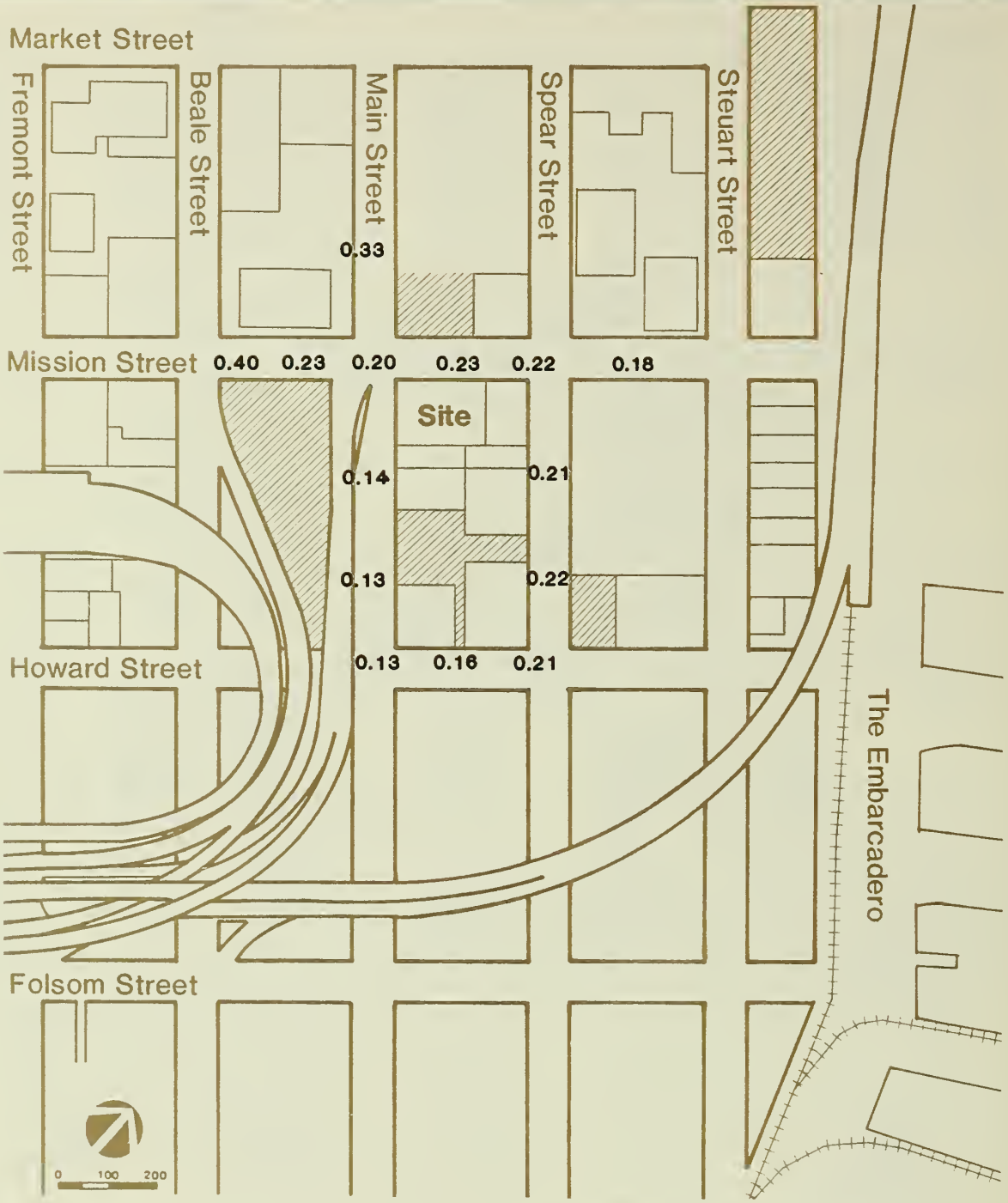
SOURCE: Dr. Bruce White and Environmental Science Associates, Inc., 1982



Open Space

FIGURE B-2: NORTHWEST WINDFLOW PATTERNS-
EXISTING SETTING (1981)

SOURCE: Dr. Bruce White and Environmental Science Associates, Inc., 1982

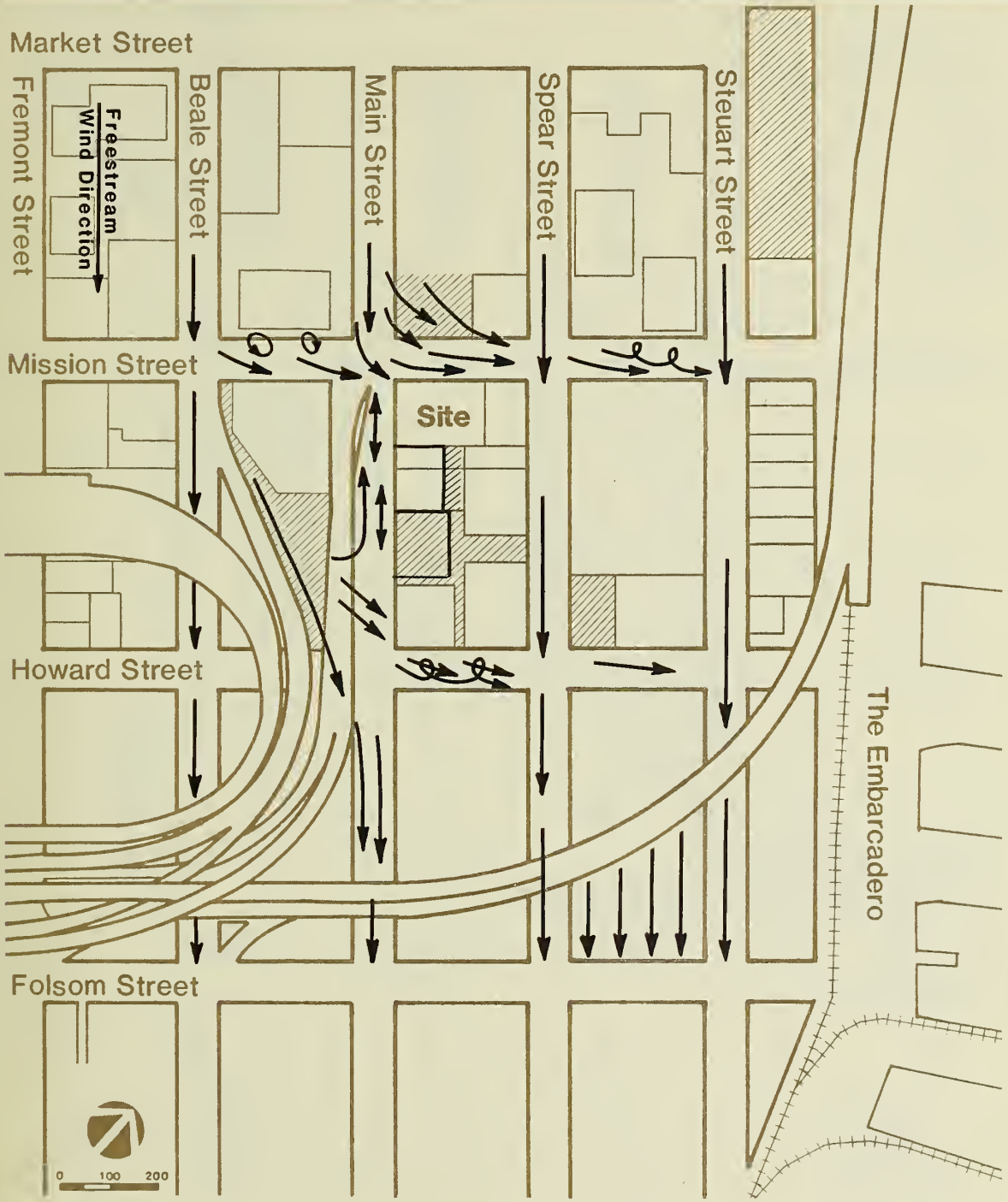


Open Space

FIGURE B-3: NORTHWEST WIND SPEED RATIOS-EXISTING SETTING (1981)

0.00 Wind Speed Ratio

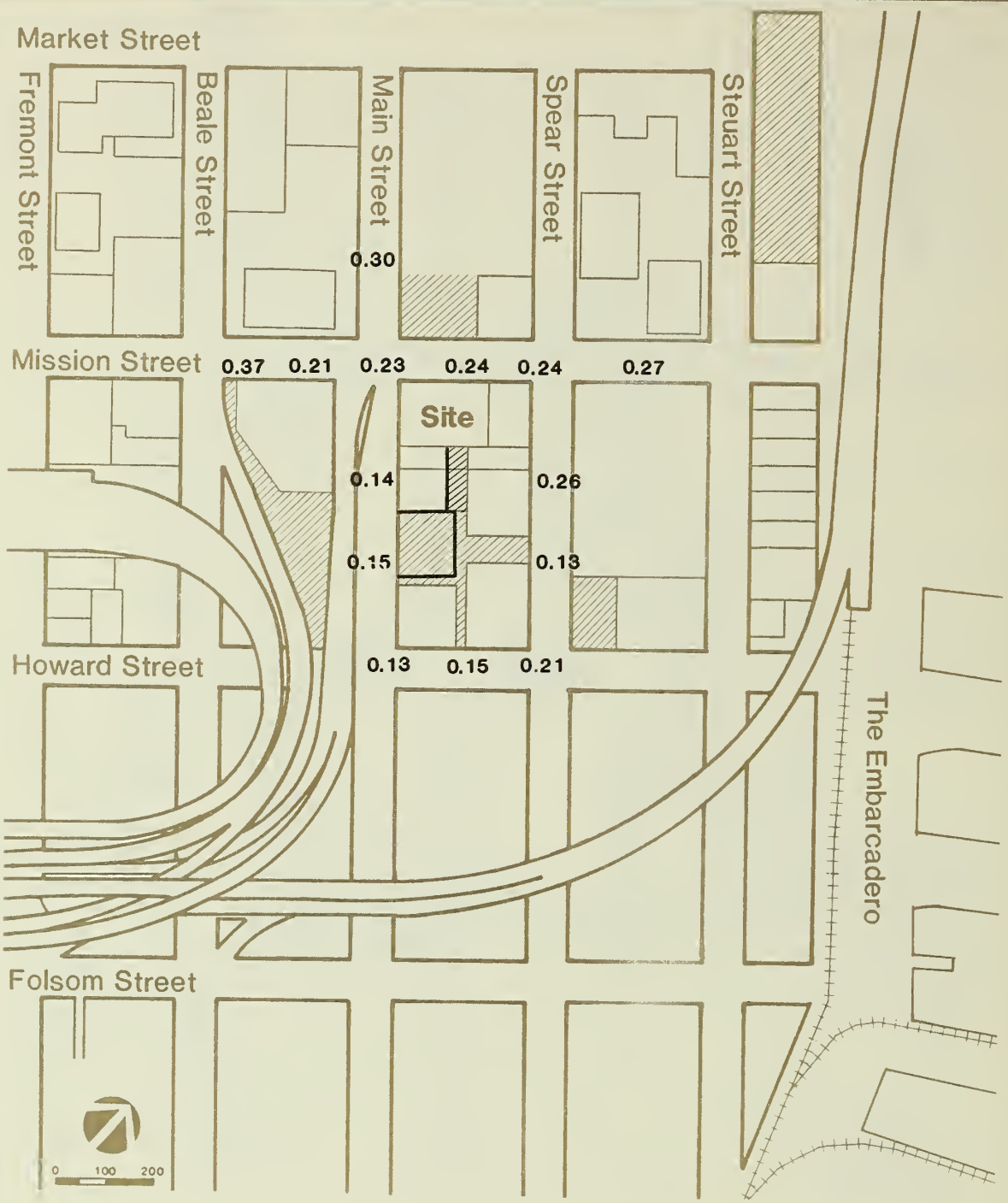
SOURCE: Dr. Bruce White and Environmental Science Associates, Inc., 1982



Open Space

FIGURE B-4: NORTHWEST WINDFLOW PATTERNS-PROPOSED SETTING

SOURCE: Dr. Bruce White and Environmental Science Associates, Inc., 1982

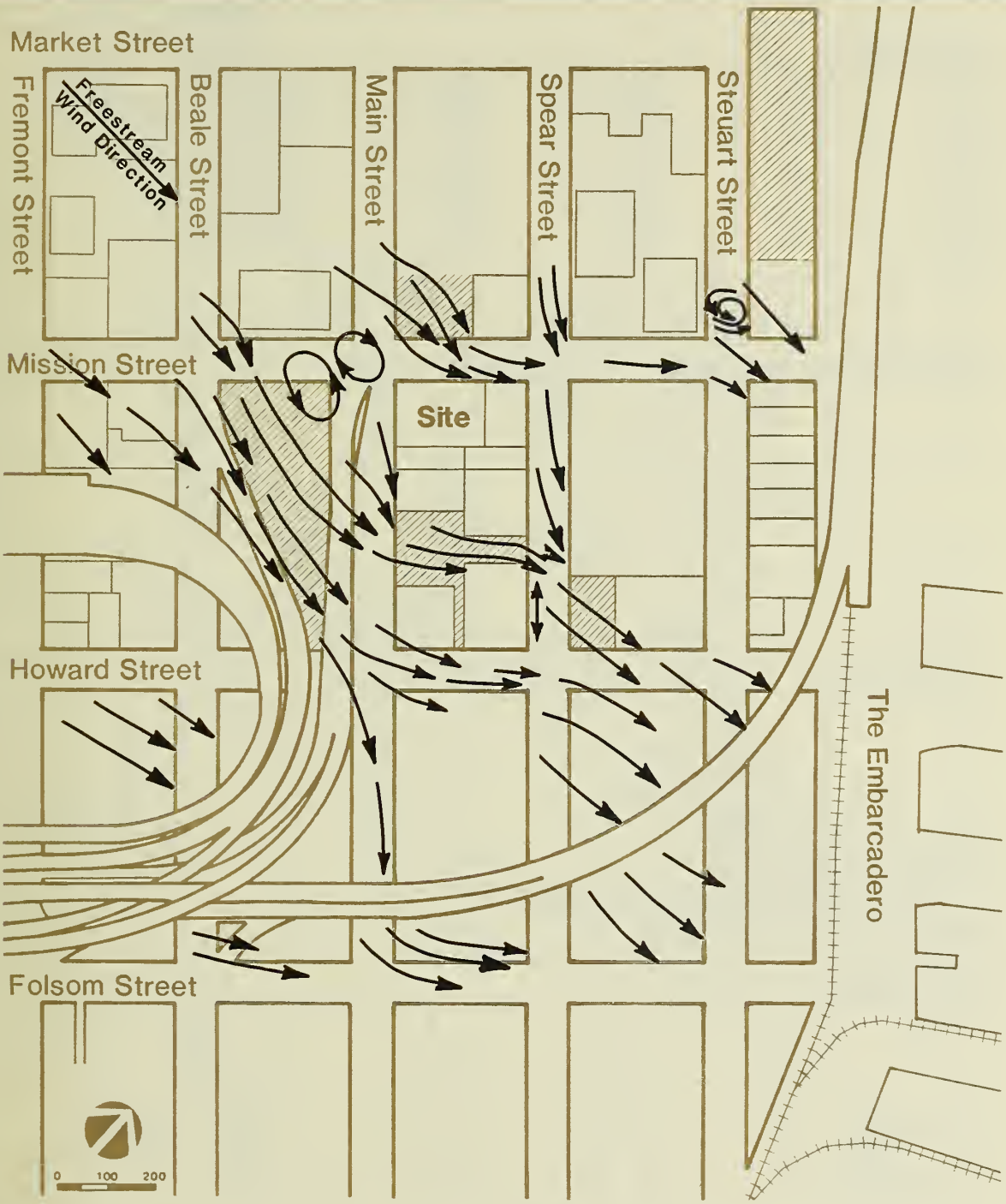


Open Space

FIGURE B-5: NORTHWEST WIND SPEED RATIOS-PROPOSED SETTING

0.00 Wind Speed Ratio

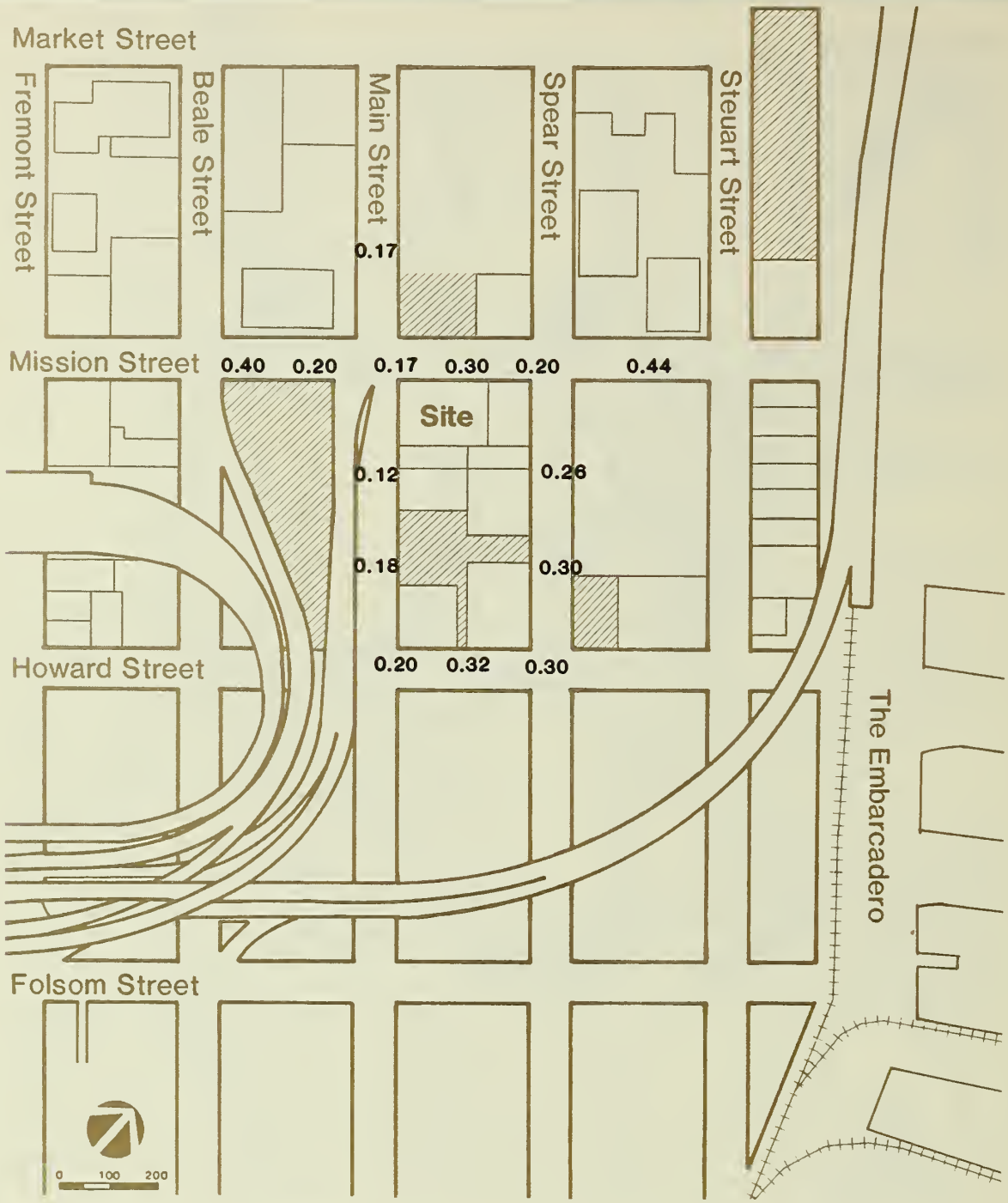
SOURCE: Dr. Bruce White and Environmental Science Associates, Inc., 1982



Open Space

FIGURE B-6: WEST WINDFLOW PATTERNS-EXISTING SETTING (1981)

SOURCE: Dr. Bruce White and Environmental Science Associates, Inc., 1982

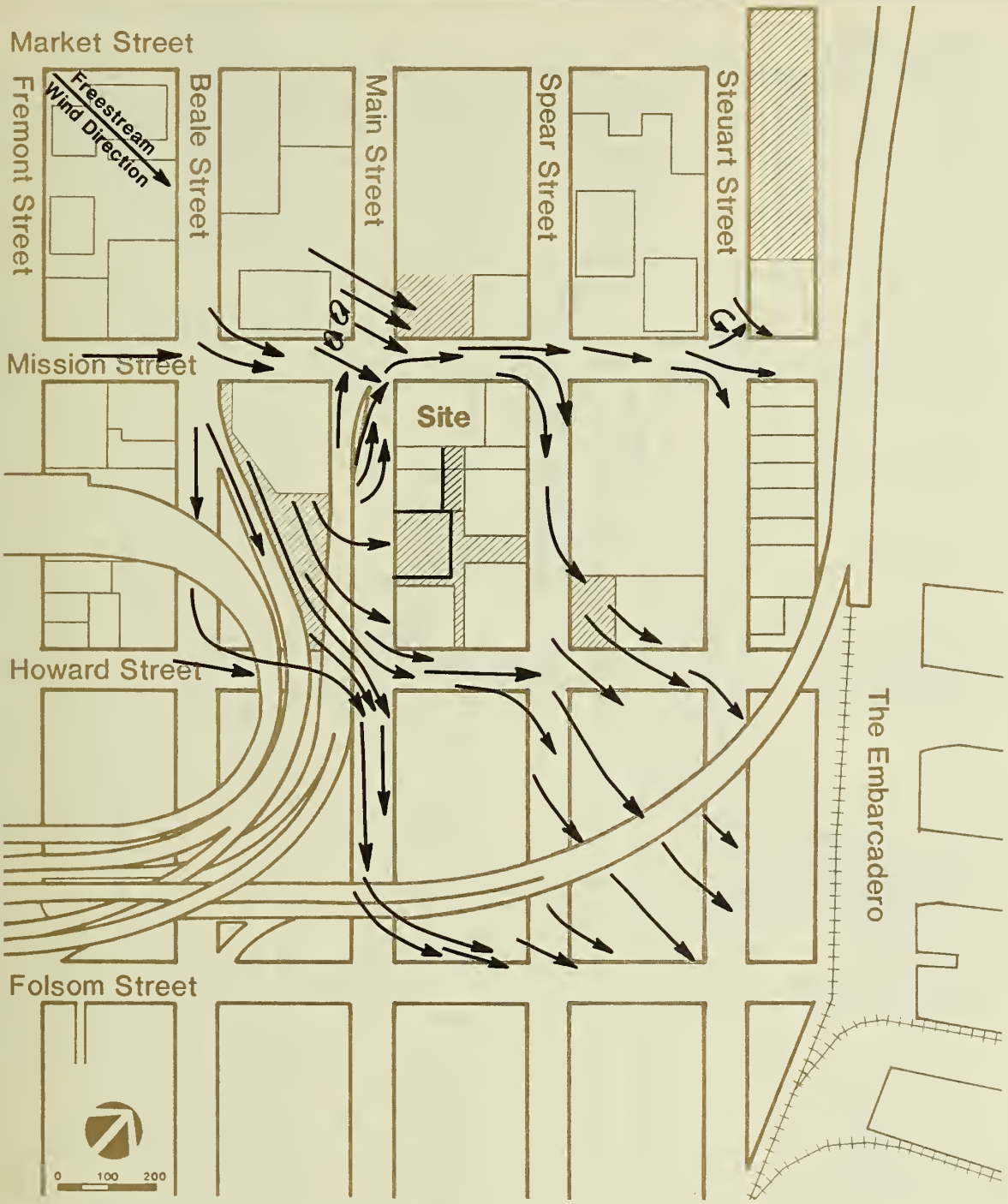


Open Space

0.00 Wind Speed Ratio

FIGURE B-7: WEST WIND SPEED RATIOS-EXISTING SETTING (1981)

SOURCE: Dr. Bruce White and Environmental Science Associates, Inc., 1982

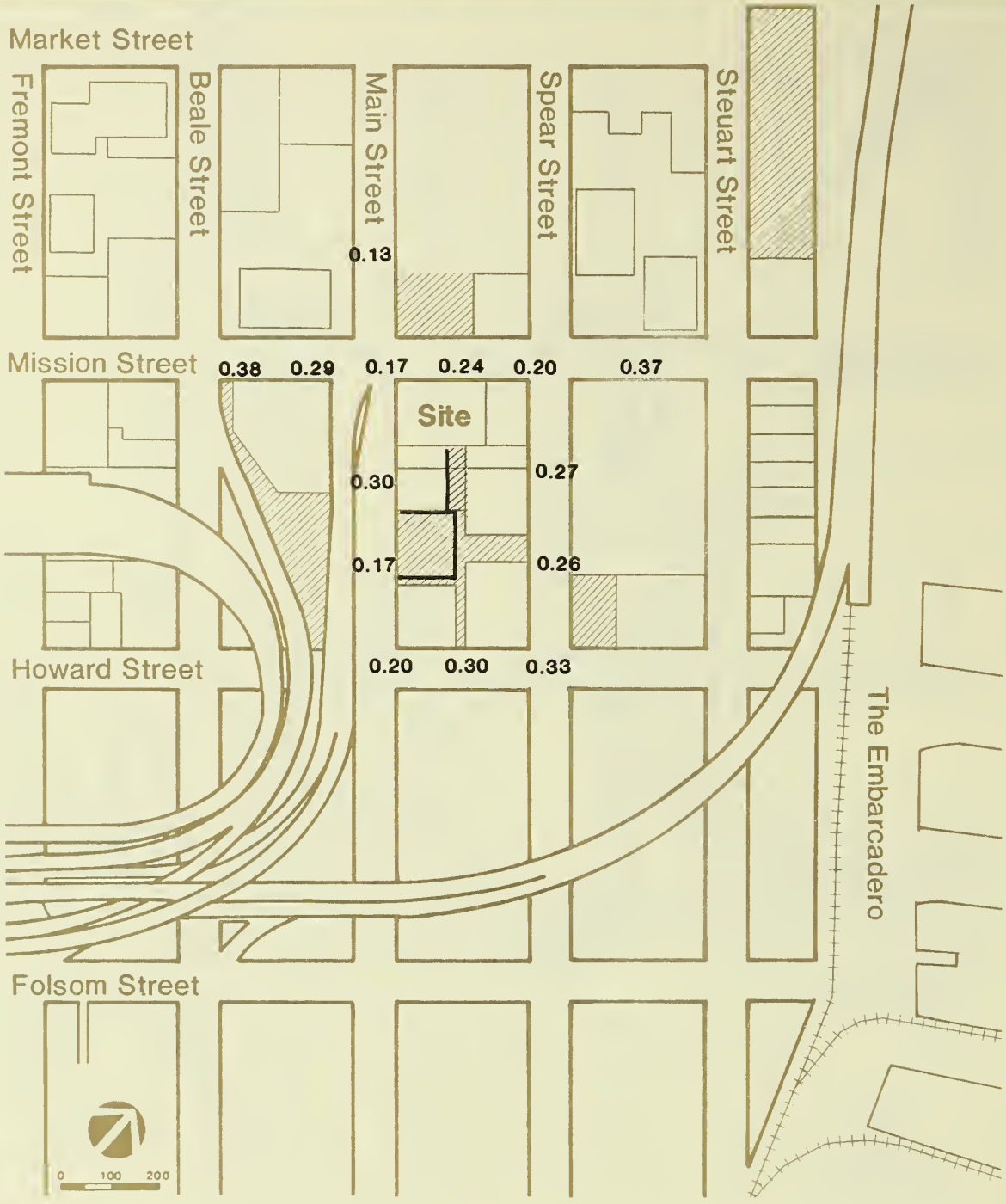


Open Space

FIGURE B-8: WEST WINDFLOW PATTEF

PROPOSED SF

SOURCE: Dr. Bruce White and Environmental Science Associates, Inc., 1982



Open Space

0.00 Wind Speed Ratio

FIGURE B-9: WEST WIND SPEED RATIOS-PROPOSED SETTING

SOURCE: Dr. Bruce White and Environmental Science Associates, Inc., 1982

APPENDIX C: EMPLOYMENT, HOUSING AND FISCAL FACTORS

TABLE C-1: PROJECTED EFFECTS OF PROJECT AND CUMULATIVE OFFICE DEVELOPMENT ON REGIONAL HOUSING MARKETS, 1983-1995

	Project Demand in 1985	Gross Cumulative Demand 1982 to 1990 (c)		Net Housing Stock Growth 1982-1990(d)	Demand as a Percent of Growth 1982 to 1990	
	No. Households	No. Emp.	No. Households	No. Units	Project	Cumulative
San Francisco (a)	147 to 305	10,400 to 27,700	7,400 15,400	12,000	1.2 to 2.5	61.7 to 128.3
Peninsula (b) (San Mateo and Santa Clara Counties)	190	12,500	9,600	87,600	0.2	11.0
East Bay (b) (Alameda and Contra Costa Counties)	315	20,800	16,000	111,800	0.3	14.3
North Bay (b) (Marin and Sonoma Counties)	125	8,300	6,400	36,800	0.3	17.4
TOTAL	782 to 935	52,000 to 69,300	39,400 to 47,400	248,200	0.3 to 0.4	15.9 to 19.0

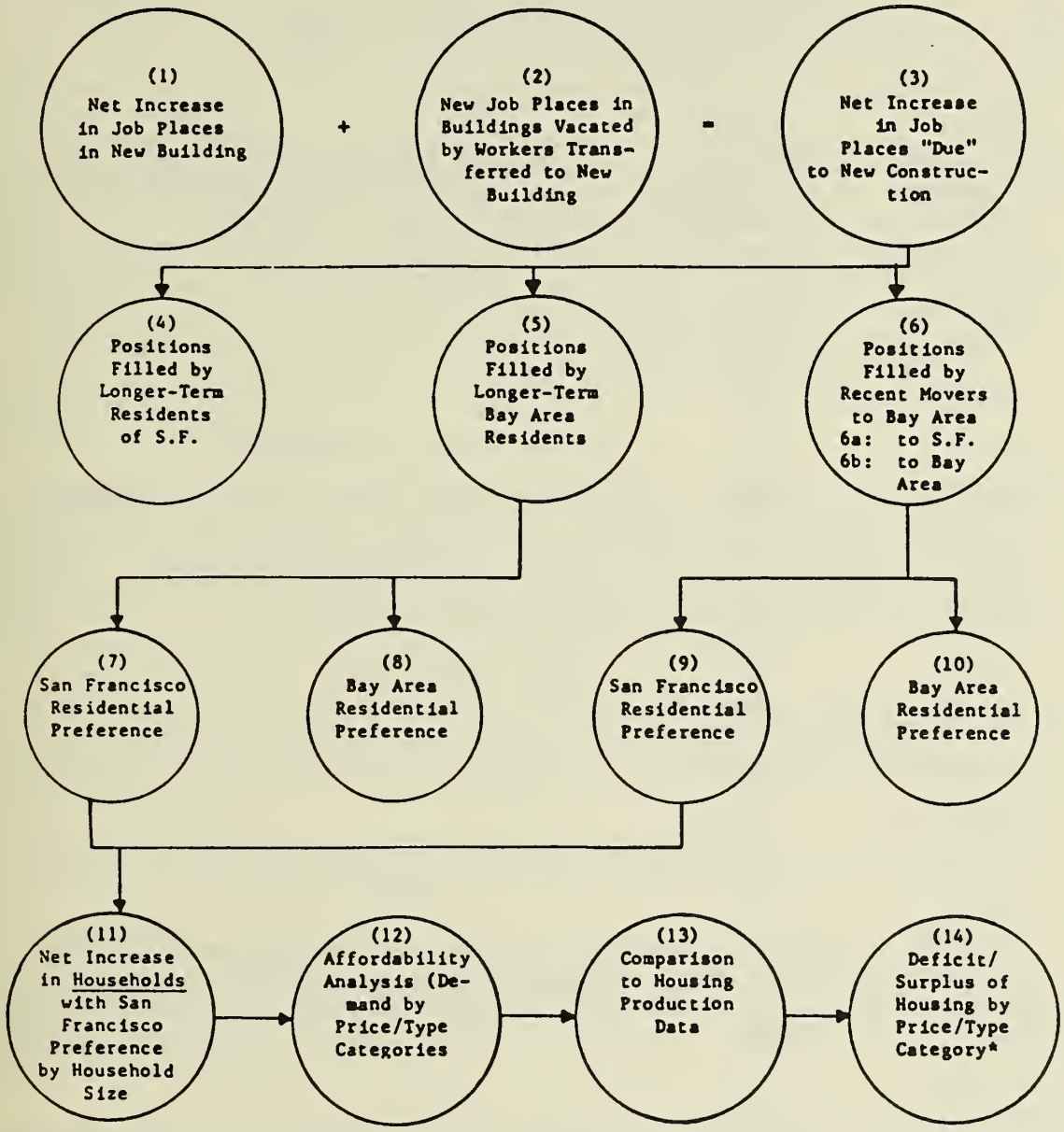
(a) The range of San Francisco employees and households is based on a report prepared by Recht Hausrath Associates, referenced as Appendix C in the 101 Mongtomery Street Final EIR, EE80.26, certified May 7, 1981 (15-30% of all employees would reside in San Francisco and 1.4 workers would occupy each household) and "Office/Housing Production Program (OHPP) Interim Guidelines," Department of City Planning, January 22, 1982 (40% of all employees would reside in San Francisco and 1.8 workers would occupy each household).

(b) Distribution of employees for other counties is based on weighted average of expected employees in Federal Reserve Bank (EE78.207), 101 California Street (EE78.27), Pacific Gateway, (EE78.61), and Crocker National Bank (EE78.298), from 456 Montgomery Street Final EIR (EE78.178), p. 167 (18% in the Peninsula, 30% in the East Bay, and 12% in the North Bay). Number of workers per household in these counties is assumed to be 1.3 based on 1980 Census Data.

(c) Total office space considered in this analysis is about 17.3 million gross sq. ft. of net new office space based on Table A-2, p. 137. The proposed Housing Element (May 1982) estimates San Francisco housing needs from 1980-85 in Table 21A. This estimate, based on the Report of the Citizen's Housing Task, July 29, 1981, shows a need for about 16,000 to 19,000 units. The "needs" estimate uses a similar office development basis, but also includes housing demand generated by other sources in addition to office development and covers the years 1980-85.

(d) Net housing stock growth is based on "Projections 79," Association of Bay Area Governments, January 1980. Projections contained in this document for 1980-1995 were prorated to reflect 1983-1995 net housing stock growth.

SOURCE: Environmental Science Associates, Inc.



* Demand due to citywide employment growth need also be considered here.

FIGURE C-1: HOUSING DEMAND AND AFFORDABILITY MODEL FOR NEW HIGHRISE OFFICE BUILDING

SOURCE: Questor Associates, June 1982

TABLE C-2: HOUSING AFFORDABILITY BY HOUSEHOLD INCOME

Gross Annual Income Per Household or Per Individual	Maximum Affordable Monthly Housing Expenditure*	Housing Cost and Type of Unit			
		Monthly Cost**	Type of Unit	(Price)	Source
$5,000	$125				
9,600 (a)	240				
10,000	250				
10,680	267	$267 -	Census Median Rent		(e1)
11,560	289	289 -	Median Rent, Studio Apartments		(f1)
15,000	375				
18,200	455	455 -	Median Rent, All Units		(f2)
20,000	500				
23,520	588	588 -	Median Rent, 3+ Bedroom Units		(f3)
25,000 (b)	625				
27,300 (c)	683				
30,000 (b)	750				
35,000	875				
40,000	1,000				
40,880	1,022	1,022 -	Lowest House Price	($95,000)	(g1)
45,000	1,125	1,125 -	Census Median Value	(104,600)	(e2)
50,000	1,250				
52,560	1,314				
55,000	1,375				
65,080	1,627	1,627 -	Median House Price	(151,203)	(g2)
101,880	2,547	2,547 -	Highest House Price	(236,750)	(g3)
300,000 (d)	7,500				

See following page for references.

TABLE C-2: HOUSING AFFORDABILITY BY HOUSEHOLD INCOME (continued)

* The Office/Housing Production Program (OHPP) Interim Guidelines, January, 1982, define affordable housing as follows: rental expenses not exceeding 30% of gross monthly income, adjusted for family size; and home ownership expenses not exceeding 38% of gross monthly income, adjusted for family size, including mortgage payments, property taxes, insurance, and/or homeownership association dues. For the purpose of this table, 30% of gross monthly income is used to calculate housing affordability for both renters and owners. For owners it is assumed that 8% of gross monthly income would cover property taxes, insurance, and/or homeownership association dues and other related expenses. No adjustment has been made for family size because family circumstances vary widely.

** Monthly housing costs refer to rents and mortgage payments for the housing prices shown in parentheses; sources of rents and house prices are as footnoted. Monthly costs of ownership housing were calculated as monthly mortgage expenses assuming 20% down payment, 30-year mortgage, and 16% interest rate, not including insurance, property taxes, and other related housing costs.

a. U.S. Bureau of Labor Statistics, March, 1982, "Area wage survey for the San Francisco-Oakland, California Metropolitan Area"; $9,600 was the mean 1980 income of inexperienced file clerks, one of the lowest-paid office occupations listed.

b. The range of $25,000 to $30,000 is assumed to approximate the median annual income of project employees.

c. The $27,300 income figure was derived by inflating the $16,300 median income of downtown office workers from the 1974 SPUR survey through December, 1981 by 67% using U.S. Bureau of Labor Statistics national wage information for nonsupervisory finance, insurance, and real estate sector employees since 1974.

d. Montgomery-Washington Building FEIR, 81.104E, certified January 28, 1982. The median salary of wage earners at 601 Montgomery St. was estimated to be $52,560 and the highest salary for corporate officers $300,000, according to a 1981 survey.

e. City Planning and Information Services, "1980 Census Information," March 1982: 1. median rent 2. median noncondominium housing value Rental data include residential hotels whose rent levels may be substantially lower than other types of rental dwellings and may therefore have an effect on the median rent.

TABLE C-2: HOUSING AFFORDABILITY BY HOUSEHOLD INCOME (continued)

f. Department of City Planning, "Rent Survey," 1980. Median rents are for:
1. studio apartments 2. all units 3. 3+ bedrooms
These data are based on a small nonrandom sample of newspaper ads and may not reflect true rental costs.

g. San Francisco Board of Realtors, "Multiple Sales Service," October 5, 1981. (Annual data on housing sales prices includes all homes listed by the Board of Realtors that were sold from February 11, 1981 to October 1, 1981 in San Francisco):

1. lowest price 2. median price 3. highest price

SOURCE: Environmental Science Associates, Inc.

TABLE C-3: SUMMARY OF RECENT STUDIES ON FISCAL IMPACT OF DOWNTOWN DEVELOPMENT

STUDY, AUTHOR, DATE	PURPOSE OF STUDY	DATA SOURCES	STUDY METHODOLOGY	CONCLUSIONS
"Fiscal Concerns" in Downtown San Francisco Conservation and Development Planning Program, Phase I Study, Sedway/Cooke, et al., October 1979, pp. 56-59	To qualitatively assess the likely fiscal impact of new development in the C-3 area under Proposition O.	SPUR STUDY (1975)	SPUR cost/revenue estimates for downtown in 1973 and for projected growth 1974-1990 were assumed. Proposition 13's effect on revenues and the possible need for increased transportation infrastructure were considered. Generalized conclusions about fiscal impact of new development were drawn.	1) After Proposition 13, "costs may exceed revenues in the downtown by as much as 25%." 2) "[N]ew downtown development will not solve the city's growing fiscal problem; without new revenue sources, development will make it worse in the long run."
Downtown Highrise District Cost Revenue Study, Arthur Andersen & Co., November 1980	To quantify for 1976-77 (pre-Prop.13) and 1978-79 (post-Prop. 13) how much revenue the C-3-O area generated and how much it costs to provide city services to the area.	Data compiled from city records and through conversations with city officials.	Only revenues generated within the C-3-O and costs of providing services to the C-3-O counted. "The principle guiding the study methodology was to calculate the amount of revenue that San Francisco would lose and the costs that could be reduced if the Downtown Highrise District were a separate city."	The C-3-O generated $56.79 million in 1976-77, or 61% more than the cost of city services to the area. In 1978-79, revenues were $53.29 million, or 48% greater than costs.
"Fiscal Considerations" Appendix C, 101 Montgomery Street FEIR, Recht Hausrath & Associates, January 1981.	Generalize conclusions about how post-Proposition 13 development downtown is likely to change the City's fiscal health from what it would be without new development.	SPUR Study, city records and conversations with city officials.	Under alternative assumptions about the cost/revenue balance in existing buildings and in new buildings, the fiscal impact over time of new development was compared to that of no new development.	"[A]n on-going process of new development would improve the City's fiscal situation. This beneficial impact would cease if new development were halted. This conclusion is tentative due to uncertainties about increased Muni costs."
Downtown Highrise District Cost/Revenue Study, David Jones, February 1981.	To quantify for 1978-79 the revenues generated by businesses in the C-3-O and the service costs imposed on the city and BART by the C-3-O.	Arthur Andersen study.	The Jones study differs from the Andersen study primarily as follows: 1) Costs of BART (but not revenues to BART) are included; 2) Only revenues paid by businesses and building owners are considered; 3) Muni deficit is computed differently; 4) Most costs estimated as percentage of revenues rather than actual service demand in the C-3-O.	The C-3-O imposed costs of $94.4 million on San Francisco and BART, or 125% more than the revenues the area's businesses and building owners generated to San Francisco.
Fiscal Impacts of New Downtown High-Rises on the City and County of San Francisco, Gruen Gruen + Associates, March 1981	To quantitatively estimate City revenues from the C-3-O and costs of serving the C-3-O in 1998, assuming the addition of 30 million square feet of building space in the C-3-O between 1981 and 1998.	Arthur Andersen study; data compiled from city records and through conversations with City officials.	"Only direct effects are considered." Costs are only measured for services "provided within the physical limits of the C-3-O district" and revenues are limited to "taxes on buildings within the district and the activities that take place within those buildings." Assumes the Arthur Andersen study is accurate and builds upon it.	In 1980, revenues from the 39 million square feet of building space in C-3-O were 1.66 times as large as costs. In 1998, after completion of the 30 million square feet of new space, revenues from the entire 69 million sq. ft. of C-3-O building space would increase to 1.92 times as large as costs.

SOURCE: Recht, Hausrath and Associates

APPENDIX D: TRANSPORTATION, CIRCULATION AND PARKING

CUMULATIVE DEVELOPMENT TRAVEL DEMAND

Travel demand from the 17.3 million gross sq. ft. of net new cumulative office development and 0.6 million gross sq. ft. of net new cumulative retail development in downtown San Francisco has been estimated using a land-use approach for trip generation. Future travel into the downtown is assumed to be a result of construction and occupancy of downtown office and retail space. The Office of Environmental Review of the Department of City Planning has identified office projects in the greater downtown area as being under formal review, approved, or under construction. Table A-2 shows the list of projects, distributed by review status, and including Assessor's Block number, City case number, and size of development for each project. The information in this table was the most current data available from the Department of City Planning at the time of preparation of this document.

Listed in Table A-2 are all office projects in the greater downtown area and the south of Market area that are under construction, have been approved, or for which a Preliminary Draft EIR (PDEIR) has been submitted to the City for review, and all office projects in redevelopment areas that are under construction or for which Land Disposition Agreements have been approved by the San Francisco Redevelopment Agency Commission. Projects that were not definitive or appeared to be inactive or withdrawn by the project sponsor were not included in the cumulative analyses.

Hotel projects have not been included in the cumulative analyses because hotel uses have different peaking characteristics from office buildings and generally do not significantly affect peak-hour traffic or transit. Residential projects have not been included because residential travel in the downtown is generally in the contra-commute direction during peak-hours and because the office trip generation rate and modal split distribution assume that housing would be available in the City. Inclusion of residential projects would thus be double counting of project generated travel.

Two redevelopment areas (Yerba Buena Center and Rincon Point - South Beach) and one private development (Mission Bay) are in or near the Downtown. In the redevelopment areas, most building sites do not yet have approved Land Disposition Agreements (LDA). Until specific LDA's are approved, no estimate of travel demand can be made (thus, parcels for which no LDA exists have not been included in the cumulative analyses). Development in the Yerba Buena Center (YBC) Redevelopment Area will be in accordance with the YBC Redevelopment Plan, as amended. Possible land uses that would be in accordance with the Yerba Buena Center Redevelopment Area Plan include commercial entertainment, convention facility (in place), cultural, downtown support service, exhibit/ballroom space, hotel rooms, institutional, light industry, market-rate dwelling units, subsidized dwelling units, office, park or plaza, pedestrian concourse, parking and retail./1/ Possible land uses in the Rincon Point - South Beach Redevelopment Area include hotel, housing, office, open space, public parking, retail and warehouse uses./2/ Mission Bay has not been included in the cumulative analyses because no PDEIR has been

submitted to the City and it is uncertain what formal proposal may be made. There are currently 7 alternative development scenarios under consideration for Mission Bay.

Existing office and retail space that would be replaced by new buildings was subtracted from the proposed new construction to better approximate the impacts the new buildings would have on transportation facilities. As shown in Table A-2, net new office and retail space is less than total new construction as a result of subtracting out existing office and retail space on sites proposed for new buildings. ("Net new" space refers to the amount of new construction in excess of existing space on each site, in gross sq. ft. of floor space. It does not refer to net leasable nor net rentable floor space).

Estimates of future travel are based on trip generation rates of 17.5 person trip ends (one way trips) per 1,000 net leasable sq. ft. of net new office space and 100 person trip ends (pte) per 1,000 gross sq. ft. of net new retail space./3/ Gross sq. ft. of office space was converted to net leasable sq. ft. by assuming an efficiency factor of 80%. The retail space has been assumed to be primarily "ground-floor retail" that would serve the office building users. Based upon survey data collected at Embarcadero Center, about 45% of the travel generated by "ground-floor retail" uses would be oriented to the office uses on-site and is already included in the office trip generation rate. Thus, 55% of the retail trip generation has been assumed to be "new" to each site./4/

P.M. peak-hour travel from cumulative development was assigned to modes of travel based upon the regional distribution and modal split shown in Table D-3. About 20% of the office travel and 10% of the retail travel was assumed to occur during the p.m. peak hour. Of the office travel, about 90% [during peak-hours] was assumed to be work-related and 10% was assumed to be other travel. On a daily basis, office travel was assumed to be 57% work-related and 43% other travel./5/

A basic assumption in all of the transportation analyses is that existing regional distributions and modal splits would continue into the future unchanged. The implicit assumption has been made that about 40% of the future employees would live in San Francisco. If housing is not available in the City, then a greater impact than noted would result on the commute corridors into the City from the North Bay, East Bay, and Southern Peninsula. If housing is not available in the City, however, the impact on Muni would be less than noted because City residents are the majority of Muni users.

Transit Analysis

Table D-1 shows the existing transit conditions and Table D-2 shows the Muni line-by-line analysis. Transit demand has been projected based upon existing travel patterns and is assumed not to depend upon the availability of transit capacity. Calculations have been made for two levels of operations (load factor). One load factor has been based upon existing capacity and represents conditions that would result if no improvements are made to the transit system. The second load factor is based upon forecast capacity (as defined in each agency's five-year plan) and portrays conditions that would result if planned, scheduled improvements are made.

TABLE D-1: EXISTING PEAK HOUR TRANSIT RIDERSHIPS AND CAPACITIES (Selected Routes*, Peak Direction Only)

	Riders	Vehicles	Capacity** Seated	Capacity** Total	Load Factor Seated	Load Factor Total	Peak
Muni	23,240	N/A	15,520	25,530	1.50	0.91	p.m.
BART***:							
TransBay	13,600	140	10,085	15,130	1.35	0.90	p.m.
Westbay	6,445	97	6,985	10,480	0.92	0.61	p.m.
AC Transit	9,850	214	10,695	13,360	0.89	0.72	p.m.
SamTrans	1700	37	1740	2,180	0.98	0.78	a.m.
So. Pacific RR	5,180	9	6,590	6,590	0.78	0.78	a.m.
Golden Gate Transit:							
Motor Coach	4,510	117	5,700	6,870	0.79	0.66	a.m.
Ferry	800	3	1,410	2,075	0.57	0.39	a.m.

* Muni: See Table D-2
SamTrans: Lines 7F, 7B, 5M, 7R, 1C, 25, 10T, 10L, 7A, 7Z, 22D.
AC Transit: Lines A,B,BX,C,CH/CB,E,EX,F,FSG/FX,G,H,K,KH,L,LX,N,NX,O,OX, R/RH,RD/RF/RCV,S,SW,V,W,Y.

** Capacity has been based on the per-vehicle capacities shown in Table D-1A:

*** BART data are on a per car basis. Sixteen trains operate in the peak hour. Eastbound: 7 Concord trains (average 10 cars per train); 5 Fremont trains (average 10 cars per train); and 4 Richmond trains (average 5 cars per train), Westbound: 12 trains.

SOURCE: Publicly available data was supplied by the agencies and personnel indicated below.

AGENCY	DATA	PERSONNEL	DATE
BART	Data Acquisition System Representative P.M. Peak Load Factors for March 1982	W. Belding Sr. Economic Analyst	June 9, 1981
AC Transit	Schedule Checks on Various Weekdays in 1982	Kay More AC Transit	June 15, 1982
SamTrans	Ridership Analysis, San Francisco Service, February 1982	G. Kipp SamTrans	June 14, 1982
CalTrans	CalTrans Ridership Report March 23, 1982	Elmer Hall	June 14, 1982
Golden Gate Transit	Monthly Reports, June 1982	A. Zahradnik GGBH&TD	July 1, 1982

TABLE D-1A: VEHICLE CAPACITIES AND STANDEES INCLUDED IN LOAD FACTORS OF TRANSIT SYSTEMS

Agency	Vehicle	Maximum Seats	Recommended Standees	Recommended Total
Muni	Motor Coach (Average)	45	23	68
	Trolley Coach	50	25	75
	LRV	68	82	150
BART	All	72	36	108
AC Transit	Motor coach (average)	48	12	60
SamTrans	Motor coach (average)	47	12	59
Southern Pacific	Suburban Car	100	0	100
	Gallery Car	150	0	150
Golden Gate Transit	Motor Coach	45	10	55
	Sausalito Ferry	400	175	575
	Larkspur Ferry	510	240	750

SOURCE: Five-Year Plans for each agency listed.

Muni is proposing to increase systemwide capacity by 19%. BART is projecting a peak hour capacity of 16,500 seats transbay (eastbound) and 11,000 seats westbay (westbound). Recommended maximum capacity, as described by BART, would be 24,750 and 16,500 persons, respectively. AC Transit does not propose any increases for its transbay service. AC Transit is restrained from implementing capacity increases on its transbay routes by the Metropolitan Transportation Commission (MTC) because those routes are in direct competition with BART.

SamTrans is proposing a capacity of between 4,800 and 5,000 seats per hour on its San Francisco routes. Recommended maximum capacity, as described by SamTrans, would be 6,250 riders. Southern Pacific/CalTrans does not propose any increases in seated capacity, but station improvements, including additional parking, are proposed. Southern Pacific ridership has been steadily declining for several years. Demand projections in this EIR are based upon an existing modal split rather than a trend and consequently show an increase in ridership on Southern Pacific. Operating costs for Southern Pacific commute service have been assumed by a joint-powers committee comprised of CalTrans, Muni, SamTrans, and Santa Clara County Transit. The committee is evaluating the need for service improvements. Golden Gate Transit is proposing to increase peak period (6-10 a.m.) motor coach capacity by 25%. Golden Gate Transit is currently operating only two of the three Larkspur ferries. The proposal for future ferry service improvements involves

converting all three Larkspur ferry boats from gas turbine to diesel engines and using all three ferries on the Larkspur/San Francisco route. The district proposes to increase peak hour ferry service by 70% by using all three ferries and operating additional runs during the peak hour./6/

TABLE D-2: EXISTING AND PROJECTED MUNI LOAD FACTORS* (PM PEAK HOUR -- PEAK DIRECTION)

	RIDERSHIP				LOAD FACTORS			
		Future**				Future**		
Line	Existing	w/o project	project	w/project	Existing	w/o project	w/project	project
1	1450	1980	16	1990	0.93	1.27	1.28	0.01
1X	640	890	7	890	1.11	1.54	1.55	0.01
2	470	670	5	680	1.10	1.56	1.57	0.01
3	520	720	6	720	1.08	1.49	1.51	0.01
4	470	640	5	650	1.08	1.49	1.50	0.01
5	980	1540	11	1550	0.94	1.47	1.48	0.01
6	540	850	6	860	0.84	1.32	1.33	0.01
7	410	640	4	640	0.77	1.21	1.22	0.01
8	660	1030	7	1040	0.74	1.16	1.17	0.01
9	470	730	5	740	0.89	1.39	1.40	0.01
11	180	290	2	290	0.64	1.00	1.01	0.01
12	450	710	5	710	0.85	1.34	1.35	0.01
14	1040	1630	11	1640	0.92	1.44	1.45	0.01
14GL	210	320	2	320	0.71	1.11	1.12	0.01
14X	340	490	4	490	0.68	0.97	0.97	0.01
15	630	940	7	950	0.88	1.31	1.32	0.01
21	640	1000	7	1000	0.85	1.32	1.33	0.01
27	150	210	2	210	0.58	0.82	0.83	0.01
31	660	950	7	960	1.07	1.56	1.57	0.01
31X	410	570	4	580	0.96	1.33	1.34	0.01
32	480	630	5	630	0.79	1.05	1.06	0.01
38/38L	1960	2780	21	2800	1.01	1.43	1.44	0.01
38AX	450	630	5	630	1.26	1.75	1.76	0.01
38BX	270	380	3	380	0.96	1.34	1.35	0.01
41TC	120	170	1	170	0.41	0.58	0.59	0.00
41MC	180	260	2	270	0.43	0.61	0.61	0.00
42	390	610	4	610	0.99	1.54	1.55	0.01
45	560	770	6	780	0.90	1.24	1.25	0.01
71	450	690	5	700	1.10	1.70	1.71	0.01
80X	420	600	4	600	0.83	1.18	1.19	0.01
J	910	1430	10	1440	0.84	1.31	1.32	0.01
KLMN	5730	8980	62	9040	0.96	1.50	1.51	0.01

*The load factor is the ratio of ridership to existing capacity, where capacity is calculated from the recommended maximum loading of the transit vehicles which is 150% of seated capacity for motor coaches and trolley coaches and 220% of seated capacity for LRVs. As estimates of load factors, these should be regarded as approximate. Muni cordon points, where the ridership and capacity counts were made, do not necessarily correspond precisely to the point of maximum loading on each line. The future load factors have been calculated using existing capacity and do not include any proposed capacity changes. Ridership is the average of the three most recent schedule checks for each route for the months of August 1981 to August 1982, as compiled by the Department of City Planning.

**Future Riders is the sum of existing riders and riders that would be generated by developments on the cumulative list (see Appendix D, p. 160.)

SOURCE: Department of City Planning; Environmental Science Associates, Inc.

TABLE D-3: TRAVEL DISTRIBUTION AND MODAL SPLIT

	OFFICE								
	Work Travel			Other Travel			RETAIL Travel		
Geographic Area	Geog. %*	Mode	%**	Geog. %*	Mode	%**	Geog. %*	Mode	%**
San Francisco									
Downtown/Northeast	7.0	Auto	9.0	33.0	Auto	2.0	84.0	Auto	3.0
(East of Van Ness,		Muni	61.0		Muni	20.0		Muni	7.0
North of Market		BART	1.0		BART	0.0		BART	1.0
to the Embarcadero,		Walk	29.0		Walk	78.0		Walk	89.0
South of Market to 101)									
Northwest	15.0	Auto	31.0	11.0	Auto	15.0	1.0	Auto	10.0
(Richmond, Marina		Muni	69.0		Muni	85.0		Muni	90.0
Western Addition)									
Southwest	13.0	Auto	29.0	13.0	Auto	12.0	2.0	Auto	10.0
(Sunset, Parkside,		Muni	62.0		Muni	69.0		Muni	80.0
Ingleside, Excelsior,		BART	9.0		BART	19.0		BART	10.0
Twin Peaks, and Upper Market)									
Southeast	5.0	Auto	26.0	7.0	Auto	13.0	2.0	Auto	10.0
(Potrero Hill, Bayview,		Muni	52.0		Muni	38.0		Muni	80.0
Hunters Point,		BART	22.0		BART	50.0		BART	10.0
East and South of 101)									
Peninsula	18.0	Auto	44.0	8.0	Auto	50.0	3.0	Auto	25.0
(San Mateo and Santa		Muni	3.0		Muni	0.0		Muni	0.0
Clara Counties)		BART	19.0		BART	30.0		BART	25.0
		SamT	7.0		SamT	10.0		SamT	0.0
		SPRR	27.0		SPRR	10.0		SPRR	50.0
East Bay	30.0	Auto	33.0	20.0	Auto	13.0	6.0	Auto	38.0
(Alameda and Contra		BART	37.0		BART	79.0		BART	62.0
Costa Counties)		AC	30.0		AC	8.0		AC	0.0
North Bay***	12.0	Auto	58.0	8.0	Auto	70.0	2.0	Auto	70.0
(Marin and Sonoma		GGTB	35.0		GGTB	20.0		GGTB	30.0
Counties)		GGTF	7.0		GGTF	10.0		GGTF	0.0

* Percent of travel with origins or destinations in each geographic area.
** Percent of travel in each geographic area using listed mode of travel.
*** GGTB stands for Golden Gate Transit Bus; GGTF stands for Golden Gate Transit Ferry.

SOURCE: San Francisco Department of City Planning, TJKM, Environmental Science Associates.

Vehicle Trip Ends and Parking Demand Analysis

To calculate vehicle trip ends, average automobile occupancies were assumed for each regional area based upon available data. Commute travel to the East Bay is now about 1.8 persons per vehicle; that to the north Bay is about 1.5 persons per vehicle; and that to the southern Peninsula is about 1.2 persons per vehicle./7/ San Francisco auto occupancy was assumed to be 1.4 persons per vehicle./8/

Vehicle travel and parking demand have been based upon demand projections and are unconstrained by the ability of the freeway and bridge system to carry the additional demand. Freeway and bridge capacity into the Downtown is essentially fixed at existing levels because major construction would be required to add new capacity. Current levels of vehicle traffic on the freeway and bridge system are at or near capacity. If the projection of person trip ends in autos is correct, the levels of vehicle occupancy would have to increase in the future as the freeway and bridge system could not handle an appreciable increase in autos during the peak hour. If vehicle occupancy were to increase, vehicle trip ends and parking demand would be less than projected. Alternately, the peak hour level of demand could spread into hours adjacent to the peak hour (as is happening). However, there is a limit as to how far the peak can spread over time and still allow business to function effectively. Prediction of a parking deficit is hindered by the inability to accurately predict modal shifts (i.e., shifts from single occupant autos to ridesharing or transit) and by the uncertainties of the City parking policy and implementation (i.e., how many spaces will the City approve in the future, where will they be located and how many existing spaces will the City allow or require to be removed or converted from long-term to short-term.) Consequently, parking predictions show a deficit based upon existing modal splits. As the factors influencing modal choice -- such as availability of transit and carpools, desirable transit and carpool schedules, walking distance, parking location and availability, parking cost, employee subsidies of parking cost, etc. -- differ between individuals, it is not possible to predict how future travel patterns may differ.

The daily parking demand was based on the projected number of auto driver work and non-work trips. The average percentage of non-work trips for multi-tenanted buildings is estimated to be 43% as assumed in the travel demand analysis. The average length of stay for non-work trips is estimated to be two hours./9/

To estimate the work or long-term parking demand, all of the auto driver work trips were assumed to generate demand for one parking space per trip per day. The non-work or short-term parking demand was calculated by dividing the non-work auto driver trips by a turnover factor based upon average length of stay. (Turnover was calculated by dividing a 9-hour working day, 8:00 a.m. - 5:00 p.m. by the average length of stay of two hours to give a turnover factor of 4.5.) Thus the average short-term (non-work) parking demand was calculated as spaces per hour.

The availability of short-term parking was estimated in an area within 1,000 ft. of the project (which was assumed to represent a 5-minute walking time). Projects proposed and under construction that would generate

short-term parking demand within the 1,000 ft. radius area were identified and the short-term parking demand was summed to give a projection of short-term demand. Long-term parking demand was based upon the number of expected work-related auto trips into the downtown. Parking supply was estimated over the greater downtown and South of Market area as travel time from parking space to final destination was no longer assumed to be the primary determinant for parking selection.

TABLE D-4: PEDESTRIAN FLOW REGIMEN

FLOW REGIME	CHOICE	CONFLICTS	FLOW RATE (P/F/M)/a/ Average	FLOW RATE (P/F/M)/a/ Percent of Capacity used
Open	Free Selection	None	0.5	0.0-3.0
Unimpeded	Some Selection	Minor	0.5-2	3.1-11.0
Impeded	Some Selection	High Indirect Interaction	2-6	11.1-33.0
Constrained	Some Restriction	Multiple	6-10	33.1-56.0
Crowded	Restricted	High Probability	10-14	56.1-78.0
Congested	All Reduced	Frequent	14-18	78.1-100.0
Jammed/b/	Shuffle Only	Unavoidable		above 100.0

/a/ P/F/M = Pedestrians per foot of a effective sidewalk width per minute.
/b/ For Jammed Flow, the (attempted) flow rate degrades to zero at complete breakdown.

SOURCE: Urban Space for Pedestrians, MIT Press, 1975, Cambridge, MA.

INTERSECTION ANALYSIS

The capacity analysis of each intersection at which a turning movement count was made utilized the "critical lane" method. This method of capacity calculation is a summation of maximum conflicting approach lane volumes that gives the capacity of an intersection in vehicles per hour per lane. (This method is explained in detail in an article entitled "Intersection Capacity Measurement Through Critical Movement Summations: A Planning Tool," by Henry B. McInerney and Stephen G. Peterson, January 1971, Traffic Engineering. This method is also explained in "Interim Materials on Highway Capacity", Transportation Research Circular No. 212, Transportation Research Board, January 1980). The maximum service volume for Level of Service E was assumed as intersection capacity. A service volume is the maximum number of vehicles that can pass an intersection during a specified time period in which operating conditions are maintained corresponding to the selected and specified Level of Service (see Table D-5). For each intersection analyzed, the existing peak-hour volume was computed and a volume-to-capacity (v/c) ratio was calculated by dividing the existing volume by the capacity at Level of Service E. Table D-6 shows the lane capacities used in this analysis.

EMPLOYMENT TREND APPROACH TO CUMULATIVE ANALYSIS

In this and other San Francisco EIRs, a land use approach has been used to estimate employment and the resultant transportation impacts of both the proposed project and cumulative development. An alternate approach is to forecast travel demand based upon regional projections of employment share (employment trend approach)./10/ Briefly, the fundamental differences between (and limitations of) the two approaches are:/11/

The land use approach (as it has been applied in this EIR) has used net new office space actually proposed or under construction (less space in buildings demolished to make way for new buildings) as the basis for travel generation. The land use approach assumes that literally all of the currently proposed development in the downtown area will be constructed and fully occupied within the time frame of the 123 Mission St. project development and occupancy. No allowance has been made for less than 100% occupancy, for proposed developments that are never constructed, or for those that would not be occupied within the time frame of the 123 Mission St. project.

The employment trend approach generates a total increase in employment in downtown that has taken account of loss of employment as industries and offices move out of the City, replacement of one industry with another (industry shifts), as well as replacement of existing office space with new office space. The employment trend approach makes no implicit assumptions concerning occupancy rates or actual square footage of development constructed; rather, it generates total employment increases by assigning jobs by metropolitan sector (area), based upon extrapolation of past trends, and considering long-term industry shifts to, within, and away from each area.

Note that neither of the two approaches has attempted to project future changes in modal split.

TABLE D-5: VEHICULAR LEVELS OF SERVICE

Level of Service	Description	Volume/Capacity* v/c Ratio
A	Level of Service A describes a condition where the approach to an intersection appears quite open and turning movements are made easily. Little or no delay is experienced. No vehicles wait longer than one red traffic signal indication. The traffic operation can generally be described as excellent.	0.60
B	Level of Service B describes a condition where the approach to an intersection is occasionally fully utilized and some delays may be encountered. Many drivers begin to feel somewhat restricted within groups of vehicles. The traffic operation can be generaly described as very good.	0.61-0.70
C	Level of Service C describes a condition where the approach to an intersection is often fully utilized and back-ups may occur behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so. The driver occasionally may have to wait more than one red traffic signal indication. The traffic operation can generally be described as good.	0.71-0.80
D.	Level of Service D describes a condition of increasing restiction causing substantial delays and queues of vehicles on approaches to the intersection during short times within the peak period. However, there are enough signal cycles with lower demand such that queues are periodically cleared, thus preventing excessive back-ups. The traffic operation can generally be described as fair.	0.81-0.90
E	Capacity occurs at level of service E. It represents the most vehicles that any particular intersection can accommodate. At capacity there may be long queues of vehicles waiting up-stream of the intersection and vehicles may be delayed up to several signal cycles. The traffic operation can generally be described as poor.	0.91-1.00
F	Level of Service F represents a jammed condition. Back-ups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration. Hence, volumes of vehicles passing through the intersection vary from signal cycle to signal cycle. Because of the jammed condition, this volume would be less than capacity.	1.00

* Capacity is defined as Level of Service E.

SOURCE: San Francisco Department of Public Works, Traffic Division, Bureau of Engineering, 1965.

TABLE D-6: VEHICULAR LEVEL OF SERVICE GUIDELINES FOR VARIOUS PEDESTRIAN VOLUME LEVELS

Pedestrians Volume Level	Pedestrians per hour (One Sidewalk) TJKM	SFDPW*	Level of Service E Maximum Lane Volume (Vehicles per Hour)
Light	less than 100		1,500
Moderate	100-200	less than 300	1,380
Moderately High	200-500	300-600	1,150
Very High	greater than 500	600	920

* San Francisco Department of Public Works levels are from a DPW worksheet, "Traffic Signal Priority Calculations, Pedestrian Volume Ranges."

SOURCE: TJKM, Transportation Consultants; San Francisco Department of Public Works.

To illustrate the differences in projections resulting from the two approaches, Table D-7, following, shows the total employment projections by the two methods (and the project's share thereof), the regional distribution of trips, and Muni's share of the new transit travel (and the project's share thereof).

As shown in the table, the employment trend approach predicts about 19% fewer employees in the downtown and about 4% more riders on the Muni than does the land use approach. The employment trend approach would thus approximate the transit demand impacts discussed on pp. 81-84 of the EIR. Similar conclusions can be drawn for the other transit agencies.

The two methods differ in several ways. The land-use approach, as it has been applied in San Francisco EIR's, analyzes impacts for the p.m. peak hour, whereas the employment trend approach analyzes the a.m. peak. Several reasons exist as to why one peak (or the other) may be the better one to analyze.

First, the p.m. peak may be more useful to analyze; actual observation shows that the p.m. peak has a greater overall effect on the local street network and transit system in the Downtown than does the a.m. peak, because more travel takes place during the p.m. peak. Also, transit service is more inclined to differ from scheduled times during the p.m. peak than during the a.m. peak, as operational delays have had an 8- to 10-hour period over which to accumulate. Finally, the on-ramps to the freeway/bridge system are greater bottlenecks (in the p.m. peak) than are the off-ramps (in the a.m. peak).

TABLE D-7: COMPARISONS OF LAND-USE AND EMPLOYMENT TREND APPROACHES

Approach	Downtown Employment Increase	Project Share*	Regional Trip Share S.F.	Pen.	E.B.	N.B.	Muni Peak-hour Increase**	Project Share***
Land Use	69,000	2.0%	49%	16%	24%	11%	12,900	1.9%
Empl. Trend+ (maximum)	56,100	2.5%	50-54%	19%	17-21%	10%	12,900++	1.9%

NOTE: Comparisons between the entries for the two approaches must be made with the understanding that the land-use approach reflects increases in employment and transit demand based solely upon increases in downtown office space, while the employment trend approach reflects total increases therein based upon historical trends. The differences among the regional trip share figures reflect these and the other differences between the two approaches.

* Employment generated by the proposed 123 Mission St. project, as a percent of the cumulative downtown employment increase.

** The Muni peak-hour increase is a demand projection (based upon existing and long-term employment trends) that is not dependent upon available or expected transit capacity.

*** Muni peak-hour trips generated by the proposed 123 Mission St. project, as a percent of the cumulative downtown Muni peak-hour increase.

+ These figures, represent the worst-case analysis under the employment trend approach reviewed and accepted by MTC, ABAG and Muni. Note that the land-use approach entries assume that an additional net new 17.3 million gross sq. ft. of office space will come on line by late 1990.

++ Based on 54% regional trip split to San Francisco (worst-case).

SOURCE: Department of City Planning and Environmental Science Associates, Inc.

Conversely, the characteristics of the a.m. peak may be more useful in that they are much sharper than those of the p.m. peak (i.e., a greater percentage of the peak-period travel occurs during a single hour). Also, as a result of the bridge system into San Francisco, travel inbound into the City is much easier to document, as tolls are collected on the inbound direction on the Golden Gate and Bay Bridges. Finally, a greater proportion of the travel occurring during the a.m. peak is employment-related; the p.m. peak also includes shopping and pleasure trips that are not directly affected by increased office space.

The land-use approach, as it has been used in this EIR, examines the p.m. peak because it has been observed to be the worst case for congestion on the City transportation system. This analysis does not reflect the spreading of the

p.m. peak that is currently occurring, as all of the new trips have been assumed to take place in a single hour.

The land use approach calculations have assumed transit capacity to be fixed at existing levels. The OER memorandum/8/ points out, "It should be recognized that transportation is a more 'elastic' resource with many options for expansion including increasing existing capacity by using articulated vehicles, expanded car pool and van pool programs and increasing the peak commuter period through flex-time programs, among others."

If future office development does not occur along the lines of the past long-term trends, as assumed in the employment trend approach, then the projections made in Working Paper I would be revised. The average annual growth during the period 1965-1980 was less than the growth per year proposed, approved, or under construction for the period 1980-1984. The employment trend approach assumes average growth through 1990 would be at the lower historic rate, reflecting activity fluctuations from the current rate including slowdowns due to changing business conditions.

Until a forecast exists to determine how the current decade's cycle of development may differ from the past, a judgment of the applicability of results from Working Paper I may not be made. Consequently, this EIR has retained the land-use approach and presented this comparison of the employment trend approach. Both methods should be looked upon as describing potential scenarios of future conditions.

NOTES - Appendix D, Transportation

/1/ Land uses from Draft Second Supplement Yerba Buena Center Final Environmental Impact Report, San Francisco Department of City Planning May 28, 1982.

/2/ Land uses from Rincon Point - South Beach Redevelopment Area, San Francisco, California, Final Environmental Impact Report/Environmental Impact Statement, San Francisco Department of City Planning certified November 5, 1980.

/3/ The regional distribution, office trip generation, trip purpose and peak hour percentage are from Attachment 1 of the Guidelines for Environmental Impact Review, Transportation Impacts Department of City Planning, October 1980 and the modal split assignment is from Attachment 2 supplemented by survey data collected by Environmental Science Associates, Inc.

/4/ Retail trip generation is from Trip Generation, Institute of Transportation Engineers (ITE), 1979. Rates have been adjusted from vehicle trip ends to person trip ends based upon an assumed vehicle occupancy of 1.4 persons per vehicle. The survey of retail travel was conducted by Environmental Science Associates at Embarcadero Center on Thursday, June 17, 1982 between 10:00 a.m. and 4:00 p.m.

/5/ The percentage of work and non-work trips is from the Guidelines (see note 1) and from Urban Travel Patterns for Hospitals, Universities, Office Buildings, and Capitols, Report No. 62, National Cooperative Highway Research Program.

/6/ Muni projections from Municipal Railway Street Rehabilitation and Replacement Plan, San Francisco Public Utilities Commission, May 1982; BART projections from Marty Birkenthal of BART on August 18, 1982; SamTrans projections from Gregory Kipp of SamTrans on August 18, 1982; AC Transit proposals from Ted Reynolds of AC Transit on August 18, 1982; Golden Gate Transit proposals from Alan Zahradnik of Golden Gate Transit on August 19, 1982, Southern Pacific proposal from James Strong, Design Engineer with Southern Pacific, on August 26, 1982.

/7/ East Bay auto occupancy is from data collected at the Bay Bridge toll plaza by the Metropolitan Transportation Commission; North Bay auto occupancy is from data collected at the Golden Gate Bridge toll plaza by the Golden Gate Bridge, Highway and Transportation District; Southern Peninsula auto occupancy is an estimate from CalTrans.

/8/ The occupancy rate is from The Downtown Traffic and Parking Study, San Francisco Department of Public Works, 1970.

/9/ The parking characteristics data are from a federally-sponsored research document: Urban Travel Patterns for Hospitals, Universities, Office Buildings, and Capitols, Rept. No. 62, 1969, National Cooperative Highway Research Program (NCHRP).

/10/ Department of City Planning, Working Paper I, Projection of Long-range Transportation Demand, May, 1982, prepared in cooperation with the Metropolitan Transportation Commission (MTC), the Association of Bay Area Governments (ABAG), and the Municipal Railway (Muni). Employment trend data was compiled by ABAG from trends in County Business Pattern (U.S. Department of Commerce, Bureau of the Census, March 12, 1979), with 1979 as the base year for future projections and regional distributions. Modal split data are from the 1975 Travel Survey prepared by MTC.

/11/ The Department of City Planning, Office of Environmental Review (OER), has issued a memorandum, dated July 2, 1982, dealing with the subject of the differences in the land-use and employment trend approaches, and recommending that both approaches be used in future EIRs to give a more balanced assessment of future peak transportation demand. This memorandum is on file with and available from the Office of Environmental Review, 450 McAllister St., 5th Floor. The memorandum calls out some of the fundamental differences between the two approaches and also details the limitations of each approach.

11 Hoffman – Mission St. and S. Van Ness Ave.

Wednesday, October 21, 1981 – 8:10 A.M. – Inbound

11 Hoffman – Mission St. and S. Van Ness Ave.

Tuesday, September 29, 1981 – 5:10 P.M. – Outbound

30X Marina Express – Bayshore Ave. and Arieta Ave.

Wednesday, October 7, 1981 – 8:00 A.M. –Inbound

J Church – Church St. and Duboce Ave.

Tuesday, September 29, 1981 – 9:00 A.M. –Outbound

SOURCE: Environmental Science Associates, Inc.

FIGURE D–1: Photographs of Peak Muni Loading Conditions

K Ingleside - Van Ness Station

Wednesday, September 9, 1981 - 8:00 A.M. - Inbound

N Judah - Van Ness Station

Wednesday, September 16, 1981 - 5:00 P.M. - Outbound

38 Geary - Van Ness Ave. and O'Farrell St.

Wednesday, October 21, 1981 - 9:00 A.M. - Inbound

38 Geary - Van Ness Ave. and Geary Blvd.

Wednesday, October 21, 1981 - 4:20 P.M. - Outbound

SOURCE: Environmental Science Associates, Inc.

FIGURE D-2: Photographs of Peak Muni Loading Conditions

M Ocean View - Civic Center Station

Wednesday, September 9, 1981 - 8:20 A.M. - Inbound

L Taraval - Van Ness Station

Wednesday, September 16, 1981 - 4:50 P.M. - Outbound

14 Mission - Mission St. and S. Van Ness Ave.

Tuesday, September 29, 1981 - 5:45 P.M. - Outbound

N Judah - Irving St. and Ninth Ave.

Tuesday, September 29, 1981 - 8:20 A.M. - Inbound

SOURCE: Environmental Science Associates, Inc.

FIGURE D-3: Photographs of Peak Muni Loading Conditions

APPENDIX E: SAN FRANCISCO AIR POLLUTANT SUMMARY 1979-1981

STATION: 939 Ellis Street (1979) and 900 23rd Street (1980), San Francisco

POLLUTANT:	STANDARD	1979	1980	1981
OZONE (O_3) (Oxidant)				
1-hour concentration (ppm /a/)				
Highest hourly average	0.10/b/ 0.12/c,d/	0.08	0.09	0.07
Number of standard excesses (state)		0	0	0
Expected Annual Excess (national)/d/		0.0	0.0	0.0
CARBON MONOXIDE (CO)				
1-hour concentration (ppm)				
Highest hourly average	35/c/	20	10	8
Number of standard excesses		0	0	0
8-hour concentration (ppm)				
Highest 8-hour average	9/c/	13.8	7.5	5.3
Number of standard excesses		1	0	0
NITROGEN DIOXIDE (NO_2)				
1-hour concentration (ppm)				
Highest hourly average	0.25/b/	0.16	0.17	0.11
Number of standard excesses		0	0	0
SULFUR DIOXIDE (SO_2)				
24-hour concentration (ppm)				
Highest 24-hour average	0.05/b/	0.034	0.018	0.016
Number of standard excesses/e,f/		0	0	0
TOTAL SUSPENDED PARTICULATE (TSP)				
24-hour concentration (ug/m^3 /g/)				
Highest 24-hour average	100/b/	117	173	103
Number of standard excesses/f/		1	6	1
Annual concentration (ug/m^3)				
Annual Geometric Mean	60/b/	42.0	52.1	56.0
Annual standard excess		No	No	No

/a/ ppm: parts per million.
/b/ California standard, not to be equaled or exceeded.
/c/ National standard, not to be exceeded more than once per year (except for annual standards which are not to be exceeded).
/d/ The national ozone standard was revised from 0.08 ppm to 0.12 ppm in January 1979 and is now expressed in terms of the Expected Annual Excess, which is a three-year average of annual excesses of the 0.12 ppm value.
/e/ The sulfur dioxide standard is considered to be exceeded only if there is a concurrent excess of the state ozone or suspended particulate standards at the same station. Otherwise, the national standard of 0.14 ppm applies.
/f/ Number of observed excess days (measurements taken once every six days).
/g/ ug/m^3: micrograms per cubic meter.
SOURCE: BAAQMD, Air Pollution in the Bay Area by Station and Contaminant; and CARB, California Air Quality Data.

APPENDIX F: TYPES AND DEPTHS OF SEDIMENTS UNDERLYING THE PROJECT SITE

Approximate Depth Below Ground Surface	Geologic Material
0 - 18 feet (± 3 feet)*	Artificial Fill: loose to medium dense sand, with wood, rubble and building debris scattered throughout.
18 - 77 feet (± 18 feet)	Bay Mud: low strength, highly compressible soft silts and clays, containing shells, organic matter, and irregular lenses of silty, fine sand and zones of significant sand content.
77 - 121 feet (± 26 feet)	Posey Formation: dense sands and firm clays; medium dense to dense sands with layers of silts and clays; sands of moderate to high strength; silts and clays are of moderate strength;lLow compressibility.
124 - 187 feet (± 8 feet)	San Antonio Formation: old Bay silts and clays; stiff sandy clays with occasional sand lenses, shells, and organic matter; moderate strength and low compressibility.
below 187 feet (± 8 feet)	Franciscan Formation: highly sheared and weathered shale and sandstone bedrock.

*Variations in depth at the bottom of each layer are shown in parentheses.

SOURCE: Harding-Lawson Associates, 1981

APPENDIX G: PROJECTED HIGH RISE OFFICE BUILDING ANNUAL ENERGY USE* - COMPARATIVE ANALYSIS

	kilowatt hours per square foot	cubic feet of natural gas per square foot
Pacific Gateway Center	15.6	21.9
101 California	14.4	0.8
Crocker National Bank	15.6	25.9
Federal Reserve Bank	16.8	55.1
Battery and Washington Streets	16.6	16.4
456 Montgomery	9.9	14.4
Five Fremont Center	10.5	71.9
101 Mission Street (100 Spear)	10.2	67.2
Spear/Main Building (160 Spear)	10.2	67.2
Post and Kearny Street Building	11.9	16.8
Averages	13.2	33.1

*Based on information contained in EIRs.

APPENDIX H: FINAL INITIAL STUDY

Mission/Main Project
81.183E

Differences between the project design, floor area calculations and other figures presented in the Initial Study reflect changes to the project and updated information.

INITIAL STUDY
MISSION/MAIN OFFICE BUILDING
81.183E

PROJECT DESCRIPTION

The proposed project is a 25-story office tower and one-story retail building with a basement on Lots 14 through 18 in Assessor's Block 3717. The project site is located on the southeast corner of Mission and Main Streets. The 25,208-square-foot site is in the C-3-O Use District and the 400-I Height and Bulk District. The site contains four one- and two-story buildings, three of brick and one of concrete, and a vacant lot. The buildings housed six commercial and retail uses, three of the which have moved to other locations as a result of the proposed project.

The proposed project would consist of a 361-foot high office tower in the western portion of the site and a 23-foot-high retail building on the eastern portion of the site. The office tower would have 24 office floors, retail and lobby space on the ground floor, and a mechanical floor at the twenty-sixth level. The project would contain 351,820 gross square feet of floor area in both buildings, slightly below the allowable floor area of 352,912 gross square feet under the Floor Area Ratio (FAR) for the site of 14:1. The office tower would be separated from the southerly property line by a 22.5 foot wide mechanical core. The 3,850-square-foot east retail building would have a narrow frontage on Mission Street, gradually widening by a horizontal stairstep effect to within 16 feet of the office tower, then stair-stepping back to end 25 feet from the southerly property line, allowing access to a proposed north/south through block pedestrian way. The entrance to the retail building would be in the center of its western face, at the point where it would be nearest the office tower. The area between the two project buildings would be an open plaza. About half of the ground floor of the office tower would be a covered plaza, in the center of which would be the entrance to the office tower. The ground floor of the tower would contain the building lobby and elevators, and a 770-square-foot retail space. The basement floor would contain two auto parking levels with about 42 spaces and two loading spaces connecting to building elevators. Access to this level would be from an entrance cut into the mechanical core on Main Street near the southerly property line.

The exterior of the building would be finished in stone-clad precast concrete, which initially would be light beige, but would weather to a lighter hue. Windows would be non-reflective glass, either tinted or clear. Windows on the ground level would be clear.

The project sponsor is Milton Meyer and Company, San Francisco, and the project architects are Skidmore, Owings and Merrill, also of San Francisco.

SUMMARY OF PROJECT IMPACTS

The proposed project would conform in some respects with the Comprehensive Plan and conflict in others. The project would result in increased vehicular and pedestrian traffic, loading activities, and public transit and parking demand; street level winds could be increased; new shadows would be created; existing businesses on the site would be displaced; an increased number of persons would be exposed to earthquake hazards; a building rated "1" by the Department of City Planning survey would be demolished, and historic artifacts

possibly located beneath the site could be disturbed by the project; and new jobs would be created and the demand for housing would increase. The project would increase demands on public service agencies and consumption of nonrenewable energy resources would increase. Noise and air quality impacts would result from construction of the project, and from project-related traffic.

Cumulatively, the project would contribute to noise and air quality effects, energy consumption, to reduction and obstruction of views from nearby buildings and higher topography and to changes in land use and appearance of the site block.

Impacts which have been judged to be insignificant because of mitigation measures included as part of the project or other reasons include effects on community services (all serving agencies have expressed an ability to serve the project with existing facilities); construction air quality (because of the mitigation measures on page 13); and hydrology (because of mitigation measures on page 13). Effects of the project in these areas have been treated in the Initial Study and will not be included in subsequent environmental evaluation.

The project would have no impact on biology, schools, creation of hazards and on maintenance and configuration of existing public roads and facilities. These subjects will not be covered in subsequent environmental documentation.

ALTERNATIVES

Alternatives to the proposed project which will be evaluated in subsequent environmental documentation are as follows: the project as proposed without parking; a pre-Interim Controls building with floor area bonuses; application of allowable bonuses to the provision of housing on site above offices; a balanced mixed-use building which would contain housing units equal to the demand created by the project; and, a building which would conform to the Department of City Planning's Guiding Downtown Development.

ENVIRONMENTAL EVALUATION CHECKLIST

A. GENERAL CONSIDERATIONS:

	Yes	Maybe	No	N/A	Disc.
1. Would the project conflict with objectives and policies in the Comprehensive Plan (Master Plan) of the City?		X			X
2. Would the project require a variance, or other special authorization under the City Planning Code?	X				X
3. Would the project require approval of permits from City Departments other than DCP or BBI, or from Regional, State or Federal Agencies.			X		
4. Would the project conflict with adopted environmental plans and goals?			X		X

The proposed project would comply with adopted objectives and policies of the Comprehensive Plan by providing office space and employment in the Downtown core of San Francisco on a site that is close to local and regional transit lines (Objective 3, Policies 1 and 2, Commerce and Industry Element). The 26-level project would comply with the Urban Design Element of the Comprehensive Plan by providing a height transition from the 43-story Spear Street Tower of One Market Plaza, the 34-story PG&E Building and the 33-story Pacific Gateway Building north and northwest of the site to the 24-story and lower buildings located to the southeast of the site (Objective 1, Policy 3, Urban Design Element). The project would provide a pedestrian link from Mission Street through the site to the through-block pedestrian way which would be incorporated as a part of other proposed projects on the project block (Objective 4, Policy 4, Transportation Element). The project would not comply with the plan in that it would replace existing small scale, older (post-earthquake) development which represents a part of the City's past (Objective 2, Policy 5, Urban Design Element), and because it would provide new short- and long-term parking (Objective 4, Policies 3 and 4, Transportation Element). It would require discretionary review by the City Planning Commission under the provisions of Commission Resolution 8474.

B. ENVIRONMENTAL IMPACTS:

	Yes	Maybe	No	N/A	Disc.
1. Land Use. Would the proposed project:					
a. Be different from surrounding land uses?	___	_____	X	___	X
b. Disrupt or divide the physical arrangement of an established community?	___	_____	X	___	X

The project would be similar in use to existing and proposed surrounding land uses. Two office buildings are located in the southern end of the block at Howard and Main Streets and Howard and Spear Streets, a third is under construction at 150 Spear Street southeast of the site, and adjacent to 150 Spear is a four-story converted brick building housing office above ground floor retail. Three other proposed office buildings are currently undergoing environmental review, in addition to the project: one at 101 Mission Street at the corner of Spear Street adjacent to the site to the east; one adjacent to the site to the south (115-135 Main Street); and one further to the south (Main/Spear Streets). The existing buildings on the sites of these proposed office buildings house (or previously housed) primarily commercial/retail, shipping and downtown support industrial uses. Across Main Street from the site, beyond the Main Street freeway off-ramp, is the Pacific Gateway Building, which is under construction. North of the project block is the Federal Reserve Bank, under construction, the Matson office building, and immediately south of the project block are three office buildings of which two are on Main Street. The Rincon Annex Post Office is located east of the project block, and beyond the Post Office is a block containing the YMCA and small retail and commercial buildings. While consistent with more recent office developments on the block and in the vicinity, in combination with the proposed high rises on either side of the proposed project, the cumulative effects of the buildings, if approved, would be to alter existing land uses on the northern portion of the block from small retail, shipping and downtown support industries to office uses.

2. Visual Quality and Urban Design. Would the proposed project:	Yes	Maybe	No	N/A	Disc.
a. Obstruct or degrade any scenic view or vista open to the public?	___	X	___	___	X
b. Reduce or obstruct views from adjacent or nearby buildings?	X	___	___	___	X
c. Create a negative aesthetic effect?	___	X	___	___	X
d. Generate light or glare affecting other properties?	___	___	X	___	X

The project itself and in combination with other existing, under construction and proposed high-rise office developments on the project block, would reduce and obstruct views from higher topography and from adjacent and nearby buildings. The project is one of three proposed projects which, if approved, would alter the appearance of the northern end of the site block from post-earthquake construction, low-rise masonry warehouse buildings to high-rise office buildings common to the downtown core. The building would contain no reflective glass or high-intensity lighting and would not create reflection or glare on other properties or on the freeway off-ramp.

3. Population/Employment/Housing. Would the proposed project:	Yes	Maybe	No	N/A	Disc.
a. Alter the density of the area population?	X	___	___	___	X
b. Have a growth-inducing effect?	___	X	___	___	X
c. Require relocation of housing or businesses, with a displacement of people, in order to clear the site?	X	___	___	___	X
d. Create or eliminate jobs during construction, operation and maintenance of the project?	X	___	___	___	X
e. Create an additional demand for housing in San Francisco?	X	___	___	___	X

The project would increase the number of employees on the site from about 20 to about 1,380. A possible growth-inducing effect of the project might result from its further fulfillment of a trend to locate office buildings in the area south of Market Street. Three businesses have already moved from the site: Golden Dragon Printing to 355 Fremont Street; Daman-Nelson Travel to 501 Howard Street; and Kuret Photographers to San Rafael. The three businesses remaining in site buildings have demolition clauses in their leases, and will have relocated from the site by November 1981. The project would create a net increase of approximately 1,360 jobs on the site. During construction, a total of about 180 person-years of employment would be created, with an average of 100 workers employed at any one time. The project could generate a

demand for additional housing units in San Francisco. This will be evaluated in subsequent environmental documentation.

	Yes	Maybe	No	N/A	Disc.
4. Transportation/Circulation. Would the construction or operation of the project result in:					
a. Change in use of existing transportation systems? (transit, roadways, pedestrian ways, etc.)	X				X
b. An increase in traffic which is substantial in relation to existing loads and street capacities?			X		X
c. Effects on existing parking facilities, or demand for new parking?	X				X
d. Alteration to current patterns of circulation or movement of people and/or goods?			X		X
e. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?		X			X
f. A need for maintenance or improvement or change in configuration of existing public roads or facilities?			X		
g. Construction of new public roads?			X		

The project would result in an increased use of existing transportation systems, both nearby freeways and local streets, and the local Muni and regional transit systems which serve Downtown San Francisco. The project would generate a parking demand that would be met partially by on-site parking. A detailed analysis should be made that would include estimates of the number of passenger and freight vehicle trips generated by the project, the impacts of such traffic on nearby streets and intersections, parking and loading needs, the effects of the project on pedestrian movements in the project vicinity, and the project impacts and cumulative impacts on the local Muni transit routes and on regional systems.

The project would provide off-street subsurface parking and loading space for the building with access from Main Street. Presently, loading for the site tenants occurs on-street, sometimes blocking a lane of traffic and creating hazardous sight-line conditions for pedestrians, cyclists and vehicle drivers. The project would provide access to a mid-block pedestrian passage. Goods movement and pedestrian circulation would thus be facilitated by the project. New curb cuts and crossing of sidewalks by vehicles using building parking and loading facilities could present hazards to pedestrians and cyclists. The mid-block pedestrian passage could encourage pedestrians to cross Mission Street in the middle of the block rather than at corners.

5. Noise.

	Yes	Maybe	No	N/A	Disc.
a. Would the proposed project result in generation of noise levels in excess of those currently existing in the area?	X				X
b. Would existing noise levels impact the proposed use?			X		X
c. Are Title 25 Noise Insulation Standards applicable?			X		X

The Environmental Protection Element of the San Francisco Comprehensive Plan indicates an existing day-night average noise level (Ldn) of 70 dBA for Main Street and 75 dBA for Mission Street. For office use the guidelines recommend no special noise control measures in an exterior noise environment up to an average of 70 dBA. As the exterior noise levels at the site are estimated to be 70 dBA and 75 dBA, major analysis of noise reduction is required by the guidelines. Some noise insulation features would be incorporated into the building design.

Noise levels in the area would not be expected to exceed currently existing levels as a result of project operation. Traffic generated by the project during any hour of the day would cause traffic noise to increase by less than 1 dBA. A 1 dBA increase in environmental noise is undetectable by the untrained human ear. Increased noise levels would be generally inaudible due to existing noise levels on Mission and Main Streets. Traffic noise from the project and cumulative development in the area will be analyzed in subsequent environmental documentation.

Noise due to mechanical equipment is regulated by the San Francisco Noise Ordinance, Section 2909, "Fixed Source Noise Levels" (San Francisco Municipal Code, Part II, Chapter VIII Section 1, Article 29, 1972). The project is in the C-3-O (Downtown Office) District. In this zone the ordinance restricts equipment noise levels at the property line to 70 dBA between 7 a.m. and 10 p.m. and 60 dBA between 10 p.m. and 7 a.m. During lulls in traffic, mechanical equipment noise levels of 70 dBA would tend to dominate the site noise environment. If equipment noise levels were restricted to the nighttime limit of 60 dBA, they would not be audible within the sound-level context of the project. The analysis of operation noise from the project and cumulative development will be considered in subsequent environmental documentation.

The California Administrative Code Title 25 Noise Insulation Standards apply to all residential structures. As the proposed structure does not include housing, Title 25 Noise Standards would not be applicable.

Throughout the 21-month construction period, trucks would be visiting the site, initially hauling away dirt and debris and then bringing materials. These activities would temporarily increase noise levels in the surrounding area.

During construction, all powered equipment, other than impact tools, would be required to meet the San Francisco Noise Ordinance requirement of 80 dBA at 100 feet. Meeting this limit would insure that construction equipment would cause noise levels at the nearest buildings to be no greater than present maximum noise levels due to traffic noise. If a second piece of equipment

were used concurrently with a first it would add about 3 dBA, making the level about 83 dBA at 100 feet. During most phases of construction, including excavation and erection, the noise levels would reach 60 to 65 dBA in the Matson Office Building located across Mission Street and 65 to 70 dBA in adjacent structures. These noise levels would interfere with human speech and concentration. It should also be noted that there may be simultaneous construction on three other sites within the same block. Simultaneous construction would be expected to increase the resultant cumulative construction noise levels in the area.

Significant noise impacts could result during the driving of the foundation piles of the building. Unmuffled and unshielded drivers emit noise levels of up to 100 dBA at a distance of 100 feet each time the driver strikes the pile. The quietest impact piledriver measured by the City generates noise levels of 92 dBA at 100 feet, but it is not always compatible with construction requirements. The City and County of San Francisco has developed alternative methods of reducing and sometimes eliminating piledriver noise impact. Under the Noise Ordinance, the Director of Public Works has the authority to require that piledrivers be equipped with "state-of-the-art" noise control devices. In the past this has been interpreted to mean meeting a noise emission limit of 85 dBA at 50 feet. Another approach that the City has taken to avoid piledriver noise problems has been to require that piledriving take place during times when the least number of people would be impacted. Typically the hours of 4 p.m. to 10 p.m. have been chosen. Piledriving also causes vibrations which can be felt in nearby buildings and can be more annoying to some persons than the noise. Noise and other construction effects, both for the project and potential simultaneous development of other sites, will be analyzed in subsequent environmental documentation.

6. Air Quality/Climate. Would the proposed project result in:

	Yes	Maybe	No	N/A	Disc.
a. Violation of any ambient air quality standard or contribution to an existing air quality violation?	X				X
b. Exposure of sensitive receptors to air pollutants?			X		X
c. Creation of objectionable odors?			X		
d. Burning of any materials including brush, trees, or construction materials?			X		
e. Alteration of wind, moisture, or temperature (including sun shading effects), or any change in climate, either locally or regionally?	X				X

The principal air pollutant of construction activities is particulate emissions. Construction activities, especially demolition and excavation, can be expected to cause temporary excesses in the project vicinity of the California State Standard for suspended particulates of 100 micrograms per cubic meter. Except to persons with respiratory problems, large-size construction particulates are more a nuisance than a hazard, and settle out of

the atmosphere rapidly with increasing distance from the source. This is in contrast to gaseous pollutants and to small-size particulates from combustion. Diesel-powered construction equipment would emit, in decreasing order by weight, nitrogen oxides, carbon monoxide (CO), sulfur oxides, hydrocarbons, and particulates. These emissions would increase local concentrations temporarily, but would not be expected to increase the frequency of violations of air quality standards. There are no significant sensitive receptors, such as hospitals, within a mile of the area. The only possible sensitive receptors in the area would be individuals with respiratory problems passing through the area or working in the vicinity. Because of mitigation measures included as part of the project (see page 16), construction air quality factors could not have a significant effect on the environment and therefore will not be discussed in subsequent environmental evaluation.

Project-related traffic would add to local and regional accumulations of CO, hydrocarbons, and nitrogen oxides (the latter two being precursors of ozone), particulates and sulfur oxides during adverse meteorological conditions, such as inversions (U.S. EPA, 1977, Compilation of Air Pollutant Emission Factors, AP-42). Ozone is a regional problem, and CO and particulate are local problems (ABAG, BAAQMD and MTC, Jan. 1979, 1979 Bay Area Air Quality Plan, San Francisco Bay Area, Environmental Management Plan). Effects of the project and cumulative development on air quality will be analyzed in subsequent environmental evaluation.

Shadows and Wind

The project, both by itself and in combination with adjacent development proposals, would create new shadows on adjacent streets and properties. Shadow analyses would be performed in subsequent environmental documentation.

The project could increase winds along sidewalk areas adjacent the site on Mission and Main Streets. Accelerated winds could affect the ground-level plaza area. Wind tunnel tests of the proposed design are recommended (Donald Ballanti, Consulting Meteorologist, Wind Impact Evaluation, June 1981), and will be included in subsequent environmental evaluation. The analysis will include consideration of cumulative development on the project block and in the vicinity.

7. Utilities and Public Services. Would the proposed project:

	Yes	Maybe	No	N/A	Disc.
a. Have an effect upon, or result in a need for new or altered, governmental services in any of the following?					
fire protection	___	___	X	___	X
police protection	___	___	X	___	X
schools	___	___	X	___	X
parks or other recreational facilities	___	___	X	___	X
maintenance of public facilities	___	___	X	___	___
power or natural gas	___	___	X	___	X
communications systems	___	___	X	___	X
water	___	___	X	___	X
sewer/storm water drainage	___	___	X	___	X
solid waste collection and disposal	___	___	X	___	X

The project would incorporate more extensive fire protection measures than most existing buildings because of more stringent code standards now in effect. The 12-inch main in Mission Street would be adequate for fire flows to the building. The project, and other proposed projects on the block, would not result in a reduction in the citywide or Downtown level of fire protection services. A major fire or disaster would be an exception and would require additional personnel and equipment, which would be called in from nearby jurisdictions (Chief Joseph Sullivan, Support Services, letter communication, June 29, 1981).

The project would increase population on the site, thus increasing the potential for crime. The project site is located within the Southern Police District with coverage from the Southern Station at 850 Bryant Street. The area is patrolled 24 hours a day by radio-dispatched cars. There are no foot patrols in the project area. The project would not require additional personnel or equipment for the police department (Sgt. Paul Libert, Planning and Research Division, telephone communication, June 24, 1981). Appropriate mitigation measures, such as alarms, adequate lighting at entryways, security personnel, and closed-circuit camera systems, would reduce the effects of the project on the Police Department.

The project would have no school-age children. No impact on area schools would result from the project.

The project would generate a demand for urbanized recreational facilities, such as plazas and city parks with benches. Such facilities are now available and others are planned by the San Francisco Redevelopment Agency on The Embarcadero two blocks east of the project, as part of the Rincon Point - South Beach Redevelopment Plan. The project would provide ground-level retail space, and covered and open plaza areas.

The project would have no direct effect on the maintenance of public facilities.

The project would result in a net increase in consumption of energy. The project would conform to California energy standards for nonresidential buildings. The project would require a below-grade transformer located under the Main Street sidewalk. There would be no gas or electricity supply problems (Alfred A. Williams, Industrial Power Engineer, John Oliver, Associate District Engineer and Bruno Wilson, Senior Map Draftsman, Pacific Gas and Electric Company, telephone communications, June 30, 1981.)

The project would result in increased use of communication systems. No supply or capacity problems exist (Jack McGovern, Facilities Engineer, Pacific Telephone and Telegraph Co., telephone communication, June 30, 1981.)

The project would generate a maximum demand for about 52,900 gallons of water per day. There would be no supply problems. A 12-inch main in Mission Street could serve the project (Cy Wentworth, Senior District Water Servicemen, Engineering Department, San Francisco Water Department, telephone communication, June 24, 1981).

The maximum amount of sewage generated by the project would be about 52,860 gallons per day. Mission Street contains a 3-foot 6-inch by 5-foot 9-inch combined sewer and Main Street contains a 4-foot by 6-foot combined sewer; either of these would be adequate to handle increased sewer flows (Nathan Lee,

Engineering Associate II, Department of Public Works Clean Water Program, telephone communication, June 24, 1981).

The project would generate a net increase of about 2.75 tons per day of solid waste. Collection would not present a problem and would probably occur daily, as at present. Disposal effects would depend on the eventual selection of a disposal method and/or site for San Francisco's solid wastes (Fiore Garbarino, Office Manager, Golden Gate Disposal Company, telephone communication, June 24, 1981).

8. Biology.

	Yes	Maybe	No	N/A	Disc.
a. Would there be a reduction in plant and/or animal habitat or interference with the movement of migratory fish or wildlife species?			X		
b. Would the project affect the existence or habitat of any rare, endangered or unique species located on or near the site?			X		
c. Would the project require removal of mature scenic trees?			X		

9. Land. (topography, soils, geology) Would the proposed project result in or be subject to:

	Yes	Maybe	No	N/A	Disc.
a. Potentially hazardous geologic or soils conditions on or immediately adjoining the site? (slides, subsidence, erosion, and liquefaction)	X				X
b. Grading? (consider height, steepness and visibility of proposed slopes; consider effect of grading on trees and ridge tops)			X		X
c. Generation of substantial spoils during site preparation, grading, dredging or fill?		X			X

The project site is situated on Bay fill which has subsided approximately nine feet since the 1850's when it was first placed. Most of the expected settlement has already taken place. Old bay clay is found between elevations -100 and -200 feet in the project vicinity. A site-specific analysis would be made before construction plans are finally developed to determine required pile depths and design and appropriate interim shoring methods. The entire site has an existing basement level graded to the property lines. Modification to the basement would result in little or no spoils. Demolition of the existing above-grade structures would result in the removal of used brick and concrete from the site.

10. Water. Would the proposed project result in:

	Yes	Maybe	No	N/A	Disc.
a. Reduction in the quality of surface water?			X		
b. Change in runoff or alteration to drainage patterns?			X		
c. Change in water use?	X				X
d. Change in quality of public water supply or in quality or quantity (dewatering) of ground water?	X				X

Water use would be approximately a maximum of about 52,900 gallons per day. Dewatering would be required during construction. Dewatering could not have a significant effect on the environment because of mitigation measures included as part of the project (see page 14), and therefore will not be evaluated in further environmental documentation.

11. Energy/Natural Resources. Would the proposed project result in:

	Yes	Maybe	No	N/A	Disc.
a. Any change in consumption of energy?	X				X
b. Substantial increase in demand on existing energy sources?		X			X
c. An effect on the potential use, extraction, conservation or depletion of a natural resource?		X			X

There would be an increase in energy consumption on the site as a result of the project because of an increase in the total square footage of structure to be served. As a detailed building design has not yet been developed, the extent of energy consumption and the types of conservation measures have not been identified.

The project would conform to energy requirements of Title 24 of the California Administrative Code so that energy use per square foot of floor area would be less than in the buildings on the site at present. There would be an increase in fuel consumption related to travel to and from the site.

There would be an increase in peak-hour electrical demand resulting from elevator use in addition to the peak-hour demand characteristics of other uses in the structure. Other aspects of electrical and natural gas demand characteristics cannot be identified until more specific building designs are developed.

No existing active solar energy collection installations would be affected by the project as none are located in the immediate area north of the site. Effects of shadows from the project will be analyzed in further environmental evaluation. No other natural energy resources would be directly affected. The project is not expected to have a significant effect on the extraction, conservation or depletion of a natural resource.

12. Hazards. Would the proposed project result in:

	Yes	Maybe	No	N/A	Disc.
a. Increased risk of explosion or release of hazardous substances (e.g., oil, pesticides, chemicals or radiation), in the event of an accident, or cause other dangers to public health and safety?			X		
b. Creation of or exposure to a potential health hazard?			X		
c. Possible interference with an emergency response plan or emergency evacuation plan?			X		

13. Cultural. Would the proposed project:

	Yes	Maybe	No	N/A	Disc.
a. Include or affect a historic site, structure, or building?		X			X
b. Include or affect a known archaeological resource or an area of archaeological resource potential?		X			X
c. Cause a physical change affecting unique ethnic or cultural values?			X		

The site was a part of Yerba Buena Cove into the 1850s, and was filled between 1859 and 1869 (Coast Survey Charts). According to "Report on Historical Cultural Resources, San Francisco", Roger and Nancy Olmsted and Allen Pastron, December 1977: "More or less continuous change took place after 1870" (page 301); and "archival research has shown that there is virtually no possibility of encountering any cultural materials from the prehistoric, Spanish or Mexican periods (from approximately 2000 B.C. to 1849 A.D.) since during these years the entirety of the C-3 alignment lay submerged beneath many feet of water" (page 415). Repeated dredging occured during the latter half of the 19th Century, and "this dredging activity would greatly lessen the possibility of encountering any significant concentrations of stratigraphically coherent cultural materials" (page 416). However, a map showing tentative locations of buried ships in Yerba Buena Cove, shows a ship, presumably from the Gold Rush era, located beneath the site. It is possible that marine relics or artifacts may be found during site excavation; further discussion will appear in subsequent environmental documentation. See page 17 for a mitigation measure to be applied in the event of a finding on the site. The site is in the secondary study area of the Heritage Foundation survey, and buildings now on the site were neither rated nor listed in the architectural survey by the Foundation for San Francisco's Architectural Heritage; the building at 199 Mission Street is rated "1" (on a scale of a low of "1" to a high of "5") by the Department of City Planning's architectural survey. None of the buildings on the site are included on the official City list of Architecturally and/or Historically Significant Buildings adopted by the City Planning Commission on May 29, 1980.

C. MITIGATION MEASURES:

	Yes	No	Disc.
Are mitigation measures included in the project?	X		X
Are other mitigation measures available?	X		

A number of mitigation measures have been included in the project as designed to date. They are described below.

INCLUDED IN THE PROJECT

1. The project would provide a covered entrance arcade, a plaza and a connecting link to a proposed mid-block passage in conformance to Objective 4, Policies 4 and 13 of the Urban Design Element.

2. The project would represent a transition in scale between 43- 34- and 33-story buildings to the north and northwest and 24-story and lower buildings to the southeast, in compliance with the height envelope intended by the Urban Design Plan (Objective 3, Policy 5) and the implementing height limits established by the City Planning Code.

3. The project would provide internal security measures such as security guards, well-lighted entries and alarm systems, to minimize the need for City police services.

4. During excavation, unpaved demolition and construction areas would be wetted to reduce dust; if this were done at least twice a day with complete coverage, particulate emissions (dust) would be reduced about 50 percent. Streets would be swept by the project contractor to clear spilled materials and dust and to minimize the hazard of siltation in the storm drain system serving the site.

5. The general contractor would maintain and operate construction equipment so as to minimize exhaust emissions.

6. The project would incorporate low-flow faucet and toilet fixtures to reduce water consumption and wastewater.

7. The building would be equipped with a trash compactor to reduce the volume of solid waste requiring storage and transport.

8. The heating, ventilating and air conditioning (HVAC) system would be equipped with a time-clock system and an economizer cycle to use outside air for cooling, as feasible.

9. Portions of basement walls which extend below the groundwater level would be designed to limit seepage through the walls. The portion of the walls above the groundwater levels would be moisture proofed.

10. If dewatering operations should require more than the minimal amount of pumping, holding tanks would be provided to prevent excess sediments from being discharged into storm drains.

11. Curbs, streets and surrounding structures would be monitored during dewatering operations to ensure that settlement would not occur. If, in the judgment of the Department of Public Works, unacceptable subsidence occurs during construction, groundwater recharge would be begun by the general contractor to halt the settlement.

12. Groundwater pumped from the site would be retained in a holding tank to allow suspended particles to settle, if this is found necessary by the Department of Public Works, to prevent sediment from entering the storm drain and sewer lines.

13. Should evidence of cultural or historic artifacts of significance be found during project excavation, the Environmental Review Officer and the President of the Landmarks Preservation Advisory Board would be notified. The project sponsor would select an archaeologist to help the Office of Environmental Review determine the significance of the find and whether feasible measures, including appropriate security measures, could be implemented to preserve or recover such artifacts. The Environmental Review Officer would then recommend specific mitigation measures, if necessary, and recommendations would be sent to the State Office of Historic Preservation. Excavation or construction which might damage the discovered cultural resources would be suspended for a maximum of four weeks to permit inspection, recommendation and retrieval, if appropriate.

14. A detailed foundation and structural design study would be conducted for the building by a licensed structural engineer and a geotechnical consultant. The project sponsor would follow the recommendations of these studies during the final design and construction of the project.

Other mitigation measures are available and will be presented in subsequent environmental evaluation.

D. ALTERNATIVES:

	Yes	No	Disc.
Were other alternatives considered:	X		X

A broader, shorter tower above a single story retail base building, which would have allowed through access from the mid-block passage to the corner of Mission and Main Streets, was considered and rejected. This configuation would not have provided a transition in heights or the strong pedestrian interest emphasized in the Urban Design Guidelines for new developments. This alternative will be considered in subsequent environmental evaluation under 5), below.

The following alternatives to the project will be considered in subsequent environmental documentation:

1) The No Project Alternative will assess no change in existing site conditions. The site includes one vacant lot, one unoccupied building and three buildings which are presently occupied.

2) The No Parking Alternative will assess the impact associated with the proposed project with no on-site parking provided.

3) The Pre-Interim Controls Alternative will assess a project with the maximum FAR obtainable using all available floor area bonuses.

4) The Housing Alternative will assess the impacts of providing housing on site. A balanced mixed-use building would contain housing units equal to the demand that may be created by the project.

5) The Proposed Controls Alternative will assess the impacts of a project which would conform to the Department of City Planning's proposals in Guiding Downtown Development.

E. MANDATORY FINDINGS OF SIGNIFICANCE:

	Yes	No	Disc.
1. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal, or eliminate important examples of the major periods of California history or prehistory?	___	X	___
2. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	X	___	X
3. Does the project have possible environmental effects which are individually limited, but cumulatively considerable? (Analyze in the light of past projects, other current projects, and probable future projects?)	X	___	X
4. Would the project cause substantial adverse effects on human beings, either directly or indirectly?	___	X	___
5. Is there a serious public controversy concerning the possible environmental effect of the project?	___	X	___

The project would, with other new developments which intensified uses over existing uses, impede attainment of air quality goals, would increase consumption of nonrenewable fossil fuels, would create view blockage, would increase shadows and could contribute to noise through a "canyon" effect. The project would have cumulative effects on land use, urban design, views and traffic, parking and transit in conjunction with other projects on the site block and in the site vicinity under construction, approved for construction or proposed.

On the basis of this initial evaluation:

____ I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared by the Department of City Planning.

____ I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because the mitigation measures, numbers____, in the discussion have been included as part of the proposed project. A NEGATIVE DECLARATION will be prepared.

✓ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Robert W. Passmore
Assistant Director-Implementation

for

Dean Macris
Director

Date: 9/22/81